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WORKERS ON THEIR INDUSTRIES.

Written by FRANK W. GALTON.

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Received 7 April, 1899

WORKERS ON THEIR INDUSTRIES

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ON

THEIR INDUSTRIES

EDITED, WITH AN INTRODUCTION, BY

FRANK W. GALTON

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PREFACE

THIS volume is the outcome of a course of free popular lectures on "Industries," delivered at South Place Institute on Sunday afternoons during the autumn and winter of 1893-4. The course was organised with a view to providing some serviceable information regarding our leading industries, their origin, development, present position, and prospects. To this end invitations were sent to those who possessed practical knowledge of their respective trades, gained by working in them for their livelihood. A few exceptions were made to this rule in the case of lectures on more general topics connected with the labour movement, given by lecturers with special qualifications to speak on those subjects. The appeal for lecturers met with a warm response, and it was very gratifying to find that the various Trade Union secretaries and other officials, whose very arduous duties might have formed a ready excuse, showed themselves not only willing but anxious to help in the work. The Institute Committee therefore beg leave

to tender its hearty acknowledgments to all those who so generously rendered assistance. The Committee were also fortunate in securing the services, as editor, of Mr. Frank W. Galton, whose intimate knowledge of the work of Trade Unions all over the kingdom makes him invaluable for such a post.

The Committee trust that the wider public to whom the volume is now offered will receive from it some help towards a clearer appreciation of the workers' position in their struggles to solve the various labour problems of the day.

W. SHEOWRING,
Hon. Sec.

SOUTH PLACE INSTITUTE,
September, 1894.

INTRODUCTION

THE fourteen essays contained in this volume were originally delivered as a course of lectures on Industries, at South Place Institute, on Sunday afternoons during the winter of 1893-4. Ten of them, from which the volume derives its title, are the work of men and women who are, or until recently were, actually engaged in earning a livelihood at the trade here described by them. Most of them are prominent as leaders and advisers of their fellow-workers, and are thus qualified to speak about their trade, not only as practical workers and as Trade Unionists, but to some extent at any rate as the representatives of the feelings and aspirations of all those engaged in the industries they describe. Of the four other essays, three are upon more general subjects, all, however, relating to some aspect of current labour problems, and by writers well qualified to deal with the various questions. The fourth, that upon the Agricultural Labourer, is the work of an expert outsider to the trade. It was found impossible to secure the services of one actually engaged in that calling to speak upon it, and hence the necessity of departing from the general rule observed in the other lectures upon specific industries. A syllabus was prepared for the lecturers, giving a brief indication of the general lines upon which it was thought that the subjects might be most usefully approached. Needless to say, however, no rigid adherence to its suggestions was expected or enforced, and it will therefore be found that while in some cases the writers have devoted much of their time and space to one side of their subject, in others the chief stress has been laid upon quite different aspects.

In presenting these essays to a wider public than that afforded

by the lecture hall, it should perhaps be explained that their aim is not in any way to provide a detailed or technical description of the processes of the various trades with which they deal. Such descriptions may be readily found, by those interested, in any encyclopædia, or the numerous technical hand-books upon trades and industries. What is here attempted is rather to give the reader an inside view of the trades as they appear to those who are employed in them. In this consists the most important difference between this volume and all previous accounts of industries that have so far been published; and such value as this little book may possess will be found to consist chiefly in the fact that it is the first attempt to present to the public at first hand the workers' own view of the occupations in which they are engaged. Imperfect as the attempt undoubtedly is in many respects, it is yet hoped that it may be the means of conveying to its readers some impression of the manner in which the social and industrial conditions and effects, and the possible future improvements in and developments of his trade, are viewed by the intelligent and thoughtful workman.

The number and variety of the subjects upon which the writers of these essays have touched render it impossible for me to do more than very briefly indicate the most important of them. The history of their trades, the condition of those employed in them at various periods, the effects of that great group of changes in the methods of production which are indicated by the Industrial Revolution, and the rise of Trade Unions among the workers, all receive more or less detailed notice. Turning to later days, the present condition of their trade, and the changes now taking place in it, with their probable effects upon the workers, are described, together with some instances of the attitude of the workmen and their Trade Unions towards such changes, while among the subjects most frequently discussed are the chief grievances existing in the trades at the present time, and the means suggested for their removal or relief. Sufficient has been said, however, to show that if the book does not prove interesting, it will not be for the lack of subjects of great interest

among its contents. I do not propose to dwell in minute detail upon all or any of these topics, but it may perhaps be convenient that I should quite briefly indicate what appears to me to be the chief points suggested by the writers, and endeavour to discover the main trend of their arguments upon those subjects.

By far the most general source of complaint, and that which has been most frequently dwelt upon in these pages, appears to be the growing tendency of our present industrial system to produce a steady divorce of the worker from anything like a complete knowledge of a trade, or even of a fairly large section of a trade. In other words it is the increasing sub-division of labour, and specialisation of the labourer. Of the evils which are thereby entailed upon the workers this volume will be found to contain ample details, suggesting, indeed, that our economists have too lightly dismissed the consideration of this subject even in those cases where they have troubled to give it more than a passing reference. It is possible that by adapting themselves and their Trade Union regulations to the changing circumstances in the trade occasioned by the introduction of this system, the workers may, in the future, find that it is a source of great advantage to them, and that by obtaining a greater share of the largely increased output, which is undoubtedly one of its results, they may be more than compensated for the added monotony of their toil and the other evils it has produced. But to do this successfully, they will require both time and a much more complete and effective Trade Union control over the conditions of their industry than is at present general among them. In the meantime it cannot be doubted that they often suffer real hardships from this cause. The trade, which they have spent many years of their lives to acquire, is suddenly rendered less valuable and more irksome to them by circumstances which it is beyond their power to control. The goods they make are produced more quickly and more cheaply by a new system to which they are too old to adapt themselves, and it is found possible to introduce boys or other subordinate labourers to perform parts of the work formerly done by the trained men. Nor do the evils this

system involves stop short at the old workmen in the trade. The new-comers, learning but a small section of the craft, and that section often one which is as well done by boys at boys' wages as by men, find themselves, on arriving at man's estate, with no other means of gaining a livelihood than the already overflowing unskilled labour market, or the ranks of that great army of casual labourers whose existence is a reproach to our methods of industrial organisation.

Nor do the workers find that the increased productivity thus achieved by the sacrifice of large numbers of both the old and the young men of their class is in any way beneficial to them. On the contrary, their positions are generally rendered much less secure, their earnings are often diminished, and the constant repetition of one process, which their work under this system involves, renders it more monotonous and fatiguing. Thus the workers find, what their class has often found before during the transition periods in industrial organisation, that their standard of comfort is being steadily reduced at the same time, and by the very same process that their productivity is being largely increased. These are some of the evils of this system, which draw forth their complaints, and tend to arouse their violent opposition to it. There can be little doubt that in many cases it constitutes a source of real and legitimate grievance to the workers employed in the trade to which it is introduced.

Another subject upon which the reader will find that the writers of these essays have much to say that is of interest is that of apprentices and apprenticeships to their various trades. Comparatively few people to-day recognise how strongly the old mediæval gild beliefs in the limitation of the number of apprentices or learners, and the strict regulation of their period of servitude, still survive in the minds of the modern workmen in our skilled trades. It is scarcely an exaggeration to say that hardly a skilled handicraft exists in which the men employed would not, if they had the power, restrict by some more or less stringent regulations the right of entry to their trade. The strength of the belief in this principle is, doubtless, partly due to

its antiquity, and is certainly also in part to be attributed to the vigour with which the theory, that wages in any trade depend entirely and exclusively upon the competition for work among the workers engaged in it, have been preached to them. The continued repetition, even to this day, by amateur economists and others, of such doctrines as, "that if two men are running after one master, wages must be low, while if two masters are running after one man, wages must be high," find their logical corollary in the workman's endeavour to limit the numbers in his trade, and so prevent the possibility of "two men running after one master." In addition to this, however, there can be no doubt that the anxiety to enforce a regulation of apprentices is largely complicated with the perfectly legitimate and reasonable desire of the workmen that new-comers into their trade shall be really skilled and selected men who have been thoroughly and efficiently taught their craft, and are capable of earning the full standard rate of wages of the trade. But it will be also noticed that in some cases, and those by no means in the least conservative trades, the belief in these old restrictions is being destroyed. It is beginning to be recognised that the theory of wages is not to be accurately summed up in the sentence I have quoted. By means of their organised and well-directed Trade Union control, the workers have already found, in some trades, that it is possible to shift the plane of competition among their members, from that of a mere struggle as to which of them shall get work at the lowest rate, into a struggle as to which of them can do the work best at a fairly high standard rate of wages. Thus it is found that all the advantages of competition in securing the employment of the best workmen are retained, while all its disadvantages in the way of "sweating," and the demoralisation which inevitably accompanies low wages and bad working conditions, may be avoided. Under such circumstances the old limitations upon the right of entry into the trade become obsolete. They are no longer necessary to keep up wages, which can be as effectively accomplished by other means, while, at the same time, the growing use of machinery, and the extension of the system of sub-division and

specialisation of labour, render a long period of apprenticeship unnecessary except in a very few highly skilled trades. In this direction the workers will no doubt find, as one of these writers has happily said, that the old must give place to the new, and that a restrictive policy may be safely allowed in most cases to fall into desuetude. It is, indeed, very encouraging to observe in how many cases this is being already recognised and its consequences frankly faced. The need of some proper and efficient method of teaching the youths in our skilled trades, which shall be calculated to replace the old apprenticeship system, is one of the subjects upon which much is said, and some useful suggestions are made in the pages of this volume.

One other point remains upon which the authors of these essays display so remarkable a unanimity of opinion that I cannot refrain from drawing attention to it. The need for further and very considerable legislative protection and control over their industries, and the conditions of their working lives, is one upon which every one of these authors is thoroughly agreed. Whether the writer be a representative of one of the old and highly skilled handicrafts, such as Mr. W. A. Steward, who writes of the workmen in the gold and silver trades, or of a comparatively modern and unskilled industry, such as Mr. W. Salmon, who writes of the corn-millers, the same growing feeling in favour of legislative remedies for the evils and difficulties of the trade and its workers will be met. It finds expression in demands for the prompt redress of a thousand grievances, some of them highly technical and confined to the one trade, while others are of a very general and far-reaching nature. From the raising of the age of coopers taken into the Royal Navy, to the enactment of a legal eight hours working day for all those employed in a trade; from the distinctive marking of foreign manufactured plate, to the absorption by the community of the whole of an industry, the cry for legislative redress of grievances, and state control of the machinery of production, ranges with an ever-increasing strength. This is, indeed, so well known and significant a feature of workmen and their Trade Unions, especially of late years, that little

need be here said regarding it, beyond drawing the attention of the reader to the fact that it is by no means confined, as some would have us suppose, to the leaders of the new Labour Unions. The pages of this book will bear evidence that this demand for legislative interference is becoming as marked a feature in the programmes of the spokesmen of the old and highly skilled trades, as it is in those of the leaders of the new unskilled Labour Unions.

I shall not dwell further upon the contents of the volume, but leave its readers to judge for themselves, and form their own opinions upon the various questions with which it deals. Nor should it be necessary for me to enlarge upon the importance of the inside view of the trades to which allusion has already been made. At a period, such as the present, when a rapidly increasing interest in every aspect of the problem presented by the existing relations between Labour and Capital is being aroused, the value attaching to a right apprehension of the views and opinions of the prominent and trusted men among the workers themselves cannot be over-estimated. The first instalment of one part of the materials for such an understanding is here presented. It is hoped that it may be followed at some future time by a further volume or volumes, containing the results of similar courses of lectures to be hereafter delivered. Certainly it cannot be doubted that a clear and carefully considered and revised statement of the wishes and aspirations of the workers employed in various important industries, given by those who are their trusted advisers, must prove of great service alike to those engaged in the trades concerned, and to the student and politician and the community at large. While fully conscious, therefore, of the many shortcomings of the book, it is yet hoped that it may prove of some service in helping inquirers to a better appreciation and understanding of the claims and aspirations of Labour. In conclusion, I have to express my very sincere thanks to the various writers who have contributed to the pages of this book, for the ready and courteous way in which they have listened to my suggestions, and responded to the calls I have made upon them; to the Committee and Secretary of the South Place In-

stitute for their ready advice and assistance when required; and finally to my friend George Turner for the very considerable and valuable help he has generously given me in the necessarily somewhat difficult task of reading and preparing for the press the numerous essays, dealing with so many and so varied subjects, that are contained in this volume.

FRANK W. GALTON.

LONDON, S.W., *October*, 1894.

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WORKERS ON THEIR INDUSTRIES.

THE NEED AND VALUE OF TECHNICAL EDUCATION.

By C. T. Millis, M.I.Mech.E., Principal of the Education Department of the Borough Polytechnic Institute.

It has been thought that a paper upon this subject would make a very fitting introduction to a series of essays by working men and women upon their Trades and Industries. Among the most important questions with which the writers of this volume will deal, will be found many which are closely connected with the subject of Technical Education. The introduction of machinery, the numerous and minute sub-divisions of labour processes, and the decay of the system of apprenticeship to trades and handicrafts, all present some problems which are susceptible of treatment from the side of technical education. It is from this side, and in relation to such questions as these, that I propose to deal with my subject; and though this may necessitate that I should go over some of the ground which will be dealt with more fully, and in more detail, by subsequent writers, the time so occupied will not, I think, be found to be wholly wasted.

At the outset it is necessary to define what is meant by technical education. A broad definition and one I have frequently used, is, that technical education is the application of the principles of art and science to a particular trade or industry. If to this de-

finition we add, that it should be combined with practical work in certain branches of some trades, we shall include more definitely that portion of the subject with which this paper will deal. For, it should be borne in mind that the education involved in the proper training of lawyers, doctors, and all those engaged in commercial pursuits, is as much technical education as that given to a mechanic or a builder's operative. It is not with that aspect of the question, however, important though it may be, that this paper will deal, but with the question of technical education as affecting the workmen engaged in the various trades and industries carried on in our great city or even our country.

It will, I think, be readily admitted that the introduction of machinery, and the keen competition resulting therefrom, have been the primary causes of the growth of that sub-division of labour which has made some system of technical education a necessity to the workmen of any nation anxious to hold its own in the markets of the world. Sir Philip Magnus, in his address at the opening of the Finsbury Technical College in 1883[1], said, in this connection, "If I were asked to say what has given rise to the necessity of technical education in its narrower significance as commonly understood, I should answer, the invention of the steam-engine. It is to the steam-engine, primarily, on a large scale, we owe the breaking up of the old apprenticeship system, and the necessity of some other kind of preparatory training. The result of the introduction of machinery and of its substitution for hand labour, has been a keen international competition for trade, which, among its other effects has reduced the margin of profits, and has consequently led to the necessary utilisation of so-called waste products, and has stimulated scientific research as applied to the processes of manufacture."

But I am well aware that the machinery and the sub-division of labour consequent upon its introduction are often advanced as arguments against the need for technical education. It is said that men need learn only one branch of a trade now, and, indeed,

[1]Reprinted in "Industrial Education," by Sir Philip Magnus. [A volume of the Education Library.] Kegan Paul & Co., London, 1889.

that it is an advantage so to do, since they gain great expertness at that branch, and their labour is thus more productive, and they are better able to earn a living at it. It is further urged that at most only a few need have the wide knowledge of the several branches or processes of a trade necessary for taking part in the direction of the industry. There is no doubt some truth in this, if we close our eyes to the future of our industries, and have no higher aim for our workmen than to turn them into machines dependent upon one minute sub-division of a trade only, and with no prospect of improving their position. But to me it is the strongest argument in favour of some training which shall help to make men better all-round workmen, by giving them at least, some knowledge of the processes preceding and following the particular branch of the trade in which they are themselves engaged. By this means they may be enabled to more readily turn from one process to another if the changes in trade or fashion should render such a step necessary, and thus they will be more independent and self-reliant and better fitted to take their part in the struggle for existence.

This view of the question is indeed well worthy the close attention of the Trade Unions. These organisations have never been slow to recognise the necessity for maintaining the standard of excellence of workmanship among their members. They have seen, too, that wages cannot be diminished by such means, but must, on the contrary, tend to be increased thereby. Large sums of money, both public and private, are now being expended for the purposes of technical education, and the benefits to be derived from such expenditure must depend largely upon the amount of interest which the workmen themselves, through their organisations, take in the matter. Many of the Trade Societies, such as the bookbinders, painters, plumbers, bricklayers, lithographic artists, zinc workers and others have long shown their interest in this work in various ways. And it is pleasing to be able to record a growing disposition, at any rate among the metropolitan workmen and their associations, to avail themselves of the opportunities for technical education provided by the

energy of the Technical Education Board of the London County Council, and other bodies.

But while it is highly important that workmen should take a keen interest in educational matters affecting their trades, it is no less important that employers should equally recognise their responsibilities. They are often among the very first to complain of any deficiencies on the part of their workpeople, while, as a rule, they do but very little to provide remedies for the evils of which they complain. Were they to set their faces with more determination against the execution of scamped and dishonest work, and to take more pains to see that the apprentices or learners in their shops and factories were properly taught their trades, some, at any rate, of the present causes of complaint would be effectually removed.

It is sometimes urged that the workmen of this country have succeeded in holding their own against their competitors, and that there are still plenty of good workmen left. This may be true of the older men, but is it so of the younger? The facilities for making experts in handicraft skill are being, except in a few special branches, rapidly reduced, so that, unless something is speedily done to supply fresh means, we may find it difficult to get good work done at all as the older generations of the workmen pass away. Already, indeed, this is being felt and complained of in some directions. Trades are now often sub-divided into many branches, and they are kept so separate from each other, that it is no uncommon thing to find young men who have no knowledge whatever of more than one branch. So minute are these divisions in many trades that a man is often little more than the hundredth part of a tradesman; and there are many calling themselves bootmakers, cabinetmakers, engineers, carpenters, etc., who are in reality only acquainted, often imperfectly, with one small section of the trade which they profess. Few, however, will deny that a workman, possessing a knowledge of two or three branches of his trade, even though he may actually earn his living at one of them only, will be a much more efficient craftsman. He will, moreover, be better fitted to suggest or invent

improvements in it than would another who was without such knowledge.

To remedy these defects in the present methods of training workmen in their crafts is the work of technical education. It must be given through special schools or colleges fitted up with well-equipped workshops and laboratories. But to be successful several things are absolutely necessary.

First, no attempt must be made to teach a trade in the schools. The legitimate object of technical education is to improve the workman in the trade he is already following; to render him capable of doing his work better and more quickly; and to give him a general idea of the part played by his efforts in the production of the articles to which he contributes, perhaps, but a minute portion of the labour and skill. Where practical work in any industry is done in a school, the classes should be rigidly confined to students who are actually engaged in some branch of the trade thus taught.[1] For while it is obvious to all practical men that trades cannot be successfully taught in a school, yet much can be done to supplement the training of the workshop by affording facilities for practical work in those branches of a trade which young men get few opportunities of learning in their shops. I am, of course, well aware that this part of my subject is hedged about with many difficulties. The difficulty of deciding whether a person employed in one sub-division of a trade should be practically taught to work in other sub-divisions or not, is itself very great. My own impression is that where the specialisation in a trade is very complete, and it has become customary for lads to serve periods of apprenticeship in the sub-divisions separately, the efforts of a technical school should be mainly devoted to perfecting them in their own particular branch. Thus, for a boot "clicker" teaching in the "lasting" or "finishing" of boots should be entirely a secondary matter; and similarly a silver-

[1] The Technical Education Board of the London County Council makes this one of the conditions which must be strictly observed by any school where practical work in any trade is taught, if any aid from the funds at the disposal of the Board is desired.

smith does not need to be primarily taught to make spoons and forks. In each of these cases the sub-divisions are recognised by the craftsmen themselves as forming entirely separate and distinct branches of the trade, and no surer method of arousing the opposition of the workmen could be found than in attempts at education which would tend to create "overlaps" in their trades. On the other hand, where the divisions of a trade are not complete, the teaching to men engaged in any one of them need not be specially confined to that branch. There is no reason why an engraver should be a heraldic or an inscription "hand," and no harm could be done by teaching him both of those branches; nor is it absolutely necessary that the silversmiths should be rigorously divided into "small" and "large" workers, or that the acute division between a fitter and a turner in an engineer's shop should be rigidly maintained. Nevertheless great care is necessary in dealing with this question, not only to prevent a rupture with the workmen, but to save the members of classes from wasting their time in learning branches of trades which will be of no use to them, and at which they will never be permitted to work.[1]

Again, the instruction in such classes should be given by practical men, who, in addition to special ability in their own particular trade, should possess also a general knowledge of the scientific or artistic principles which are more or less intimately connected with their industry. But the teaching of the general

[1] Another difficulty in this direction, but one too minute to discuss here, is that involved in the question of where the teaching of general principles of art and science ends and the teaching of a trade is begun. Thus, throughout his Report to the Special Committee (of the London County Council) on Technical Education, Mr. H. Ll. Smith regards the teaching of repoussé work and wood-carving as branches of general art training. On the other hand, to many these sections of art work are two distinct and legitimate crafts, and the teaching of them is the teaching of trades. All the valuable art training they give can be equally obtained from clay or wax modelling without the necessity of learning to manipulate difficult tools, and to work in a very stubborn and difficult medium such as copper or wood.

principles of science and art, and that of the practice of a trade, will both be better done if they are kept in different hands. To the intensely practical mind of the workman, used to working by rule of thumb, and judging everything rigorously by its practical results, no amount of knowledge of the theory of his trade will compensate for even the smallest errors in its practice. Of the theoretic portion of the teaching he is indeed not well qualified to judge, and small mistakes might be easily overlooked. But of the practice he is of all men the keenest critic, and many a promising trade class has had to be abandoned merely by reason of the imperfect practical acquaintance with the trade possessed by the teacher.

The amount and nature of the practical work required will no doubt vary with almost every trade, and will be largely governed by the opportunities afforded for acquiring a knowledge of the different branches of the trade in the workshops. Thus the bricklayer requires practice in the brickcutting so much in demand nowadays; the carpenter requires practice in staircasing; the plumber in lead-working; and the engineer in all the branches of work other than that in which he is specially engaged. In all these cases, and especially that of the engineer, the present system of large firms manufacturing only a few specialities does not allow apprentices or other learners a sufficient insight into the various branches of the trade. In every case where practical work is thus undertaken in a class, it should moreover be an illustration of theoretic principles taught in the class-room.

There is considerable divergence of opinion as to whether such teaching should be given before or after entering the workshop. Some think it more effective as a preparation beforehand. Others, like myself, while acknowledging that some general preparation apart from any special reference to a trade is good, are firmly convinced that specialised instruction is more useful if given concurrently with attendance at the workshop. Greater advantage would, however, be derived if employers would permit their young workpeople to leave work earlier, say at five o'clock, upon one or two days a week in order to attend special classes

connected with their trade, so that they could come fresher and brighter, and be better able to profit by the instruction given. That some such stimulus is necessary for the overtired and growing youth to attend trade classes after a day's hard work will not be seriously questioned by any one with experience in these matters.

And here let me digress to refer to the marked influence already exerted on the training of plumbers by the Plumbers Company of London. By its scheme of registration, and by the bestowal of the freedom of the company upon those craftsmen who succeed in passing the honours examination of the City and Guilds of London Institute in plumbers' work, it has done much to raise the general level of the work executed. The Carpenters and the Painters Companies are also helping forward the work of educating those engaged in their respective branches of industry. Similar encouragement in other trades is all that is still required to give a wider impetus to the movement.

Of the results of such technical training, there are, it appears to me, two main things to be hoped and worked for. First, that the exceptionally clever and talented boys working in any trade may have opportunities provided them for rising to the highest positions in their trades or occupations. And second, that the whole mass of the workers may be levelled up in the estimation of the public, and the final remains of the old stigma attaching to the workman or "factory hand" successfully abolished. There is no real reason why the clerk should be considered of higher social standing because he wears a black coat, or why the workman should be despised because his work is rough and dirty. And it will be not the least of the results of a better technical training of our workmen if it leads to a better appreciation of the real dignity of their labour. In these days, workmen are beginning to seek for a fuller recognition of their needs by striving to secure positions on our local governing bodies, and even the highest posts in the administration of the State. Important though it may be that their claims in these directions should be recognised and that they themselves should possess such education as will qualify them to successfully fill such positions, it must be admitted that it is at

least of equal, if not even of greater importance in an industrial country such as ours, to have thoroughly educated and qualified workmen in our workshops and factories. A general recognition of this necessity, both by the workers and the general public, will go far to remove the artificial distinctions so often created between hand and brain workers. In the time of Napoleon the First, it was a common saying that every French soldier carried a marshal's bâton in his knapsack. Let us see to it, that our workmen may be provided with such means of acquiring education that every one of them may have the opportunity, if other circumstances are favourable, of becoming a captain of industry.

So far I have devoted myself mainly to the consideration of technical education as applied to specific trades, or technology as it is called; let us now turn for a few moments to its scientific and general aspects. It is very essential that no narrow and confused view should be taken of the training necessary for workmen. Mere expertness in handicraft skill is not a sufficient equipment for workmen in the higher branches of industry. To these men it is that we shall come in the future to look more and more for our skilled foremen, managers and even directors of industry. For these, some supplementary instruction is necessary. They will need a knowledge of the strength, nature and properties of the materials on which they have to work if they desire to keep abreast of the times. It is not sufficient to teach them merely the details of the processes of a trade without explaining something of the scientific principles upon which they are based. Their education, to be effective, must include a groundwork of drawing and of the elementary principles of chemistry and physics. The efforts of the Science and Art Department, of County Councils and other bodies, should hence be directed towards the encouragement of sound elementary science and art education amongst working men.

How little progress has yet been made in the provision of technical education in England is well known. Although we are the first industrial nation in Europe, we have yet allowed almost every continental nation to far outstrip us in provision for such education.

The following figures in Table I. are taken from the report of the Technological Examinations of the City and Guilds of London Institute, and, as far as I am aware, they are the only statistics that give anything enabling one to form an idea of the progress of technical education in the United Kingdom. They show the number of attendances in about sixty subjects throughout the country.

Table I.

1881	2,500
1882	3,467
1883	4,052
1884	5,874
1885	6,396
1886	7,660
1887	8,613
1888	10,404
1889	11,874
1890	12,022
1891	13,202
1892	16,565
1893	22,691

Insignificant as these figures are when we reflect upon the enormous mass of the artisans in our country, they show better results than do similar figures for London alone. The existing provision of technical education in London falls far below the standard of such towns as Birmingham and Manchester, not to mention Munich and other continental cities. London contains a larger artisan population than any other city, but its skilled trades are largely recruited from the provinces, whilst Londoners, from lack of proper training, go to swell the ranks of unskilled labour. The following figures—Tables II. and III.—show the number of attendants at certain classes for special trades in London.

Table II.

Showing attendances at London classes for the following trades in 1893 :—

Plumbers	393
Carpenters	241
Bricklayers	106
Mechanical Engineering and Metal Trades	309

Table III.

Table showing the number of persons employed in certain trades in London, with number of persons attending special classes in those trades, etc. Compiled from H. Llewellyn Smith's report to the Special Committee on Technical Education appointed by London County Council in 1892 :—

Number of persons engaged in the following trades in London.		Number in attendance at special trade classes for each of the following trades.	Number attending classes, but not workers in the trade.	
Carpentry and Joinery	39,489	98	53	2,520 persons in attendance at classes bearing on the Building Trades.
Bricklayers	23,591	51	4	
Plumbers	7,269	341	12	
Locksmiths	5,263	no class	no class	
Engineering and Metal Trades	54,061	266	93	2,924 persons in attendance at classes bearing on the Engineering & Metal Trades.

The total number of operatives in all the building trades in the county of London in 1891 was about 140,000, of whom 15,000 were under 20; yet the number of them who were attending classes on the vitally important subject of building construction and drawing was less than 800. About 30,000 men and boys are at work in London in the printing and lithographic industries; only 140 of these were in 1891 getting any kind of technical instruction connected with their work. London has about 46,000 workers in the cabinet-making and upholstery trades, of whom 7,000 are under 20. The total number who were in 1891 receiving technical instruction in their craft (including designing and carving) was under 120. Only three out of the 10,000 persons employed in London's tanneries, and only ten of its colour workers, were learning any branch of chemistry. And though it will be naturally admitted that many of our great industrial cities are far better off than this, and that much has been done in London during the last two years to increase the provision of schools and the number of attendants at them, there is still very great room for further improvement in both of these directions. We can only hope that the efforts now being made, and the interest aroused in this subject, may lead to more improvements in, and a rapid extension of our system of technical education.

DRESSMAKERS AND TAILORESSES.

By Frances Hicks, Secretary of the Women's Trade Union Association.

It is impossible in the short space at my disposal for this essay to deal adequately with the history of clothing. I am afraid that if I were to go into that subject, taking note of all the variations of race and climate, and of changes in fashion and custom, it would require a volume to itself. The study would, however, be a very interesting one, especially when we remember how frequently the characteristics of dress are inseparable from the strong personalities of history. We cannot think of Queen Elizabeth without her "ruff" and "hooped" skirt, or of Joan of Arc except as arrayed for battle; and future generations will probably associate John Burns with a straw hat.

Before the growth of large towns and cities with the development of commerce in England, clothes were mainly home-spun and home-made. Dressmaking is one of the industries that formerly belonged to the home, just as much as baking and washing, no matter what the occupation of the bread-winner might be. Baking day at home is now, in the towns, supplanted by the bake-houses; laundry work is becoming more and more a workshop or factory industry; the handloom has long been replaced by the weaving shed; and, while there is still much home-made clothing, a very large industrial class has already arisen devoted to the making of costumes and clothing in our city workshops and factories.

Dressmaking is technically known as a business, just as tailoring is styled a trade. I believe that in the indefinable grades of our society, a business is thought to be more ladylike than a

trade, and, indeed, next door to a profession. It is unnecessary for me to recount the reasons by which girls, who were formerly kept at home to help mother until they left to become housekeeper and mother in some other home, have been compelled to go out into the world to earn their living the moment they are permitted to leave school. It is the most natural thing that a domestic occupation should be sought after by them, and we should expect to find, what is actually the case, that next to domestic servants, dressmakers form by far the largest class of women workers.

Dressmaking is an occupation eminently suited to women. It does not require great physical strength, and while there is an infinite variety in the work which prevents it from ever becoming tedious, there is also plenty of scope for ideas, and free play for a woman's special stock of ability in working out details. And here I would suggest, that instead of constantly railing against the frequent changes of fashion, and the hideous extremes to which "stylish" women will go in the worship of that fickle goddess, our technical schools should encourage the art of dress designing. Classes should be held for the study of the human form with a view to clothing it suitably, natural form, health, and convenience being duly considered. Nature is constantly changing her beauties, and, by never showing us two examples of herself exactly alike, teaches us that variety is charming. It would be rather conceited for us to think that we could halt at any given point and say, "now we have reached the highest perfection of beauty and utility in dress, and we decree this to be the uniform for ever after."

In dressmaking, as in most industries, there are many classes of workers, and I will endeavour now to describe the more important of them. The largest class consists of the daughters of the skilled mechanics in our towns. Many of these girls refuse to enter upon the life of the "house slavey," or general servant, which is the modern substitute for domestic service, and they equally wish to avoid mixing with factory girls, who are all reputed to be rough. But they must begin to earn something immediately

they leave school. In every suburb and working-class district there are to be found a number of women, who, having worked for a few years in some fashionable dressmaking establishment, and being now married or otherwise at home, have set up for themselves in business as dressmakers, and give West End style to the neighbouring tradespeople, upper-class servants, and perhaps a few wealthier patrons. It requires very little capital to start a business of this kind, since the customers generally provide their own materials, and with moderate security a sewing-machine can be hired for 1s. 6d. per week. The chief requirements are a tidy room, with fashion plates and magazines on a table, a mirror, and at the window long white curtains which admit a good light to match colours by, and yet screen the customer while garments are being tried on. At first the workroom must be kitchen, living-room, and workroom combined, but with perseverance and a pleasant manner it is possible in a few years to get a connection sufficiently large to keep half a dozen assistants employed. Then a proper workroom is necessary. From such places as this it is that the large army of dressmakers is recruited. It is always found convenient to have an apprentice to take work home, and to run errands for matching cotton, buttons, button-hole twist, skirt-braid and other miscellaneous necessaries. In the workroom an apprentice saves much of the constant getting up and sitting down to attend to the fire where an iron is heating, or to answer the door to the baker, or milkman, or street hawker, or a customer, just when a piece of work which requires nicely adjusting is being fixed. In between these duties the apprentice sits down to make pockets, pull out the unnecessary tacking, and "overcast," that is sew-over, the raw edges of seams not covered. When there is nothing else she can do she practices on the sewing-machine, or "button holes" on odd scraps of material. In time she is entrusted with parts of the commonest work, such as servants' cotton dresses or a shop girl's black dress, which has to be made cheaply. Such an apprentice usually gives six or twelve months service for nothing, and after that continues for another twelve months as an improver at wages of 2s. or 2s. 6d. per week.

At the place where I was apprenticed the workroom was shop and kitchen combined. The family consisted of the dressmaker, her two sons who were at school during the day, and a lazy husband who spent most of his time looking for "suitable" work. They had also a gentleman lodger, whom we saw at about ten o'clock every morning when he came down to breakfast. A strong girl came daily to do the housework, attend to the lodger and cook the meals, and in the afternoon sit down to plain needlework. The dressmaker, one assistant, and I, sat all day at a table near the window. The sewing-machine stood beside the table, and the rest of the room served for general household purposes. Our hours were from eight in the morning to eight at night, with one hour off at midday for dinner. Tea was given to us at the work-table, and we did not cease working for that meal.

It was my duty as apprentice to fold up and put away all material carefully, and to pick up the pins from the floor before leaving at night. This was especially annoying, as it made me always later than the others in getting away. But it was not thought worth while to be very punctual in leaving off at any time, and if there was anything nearly finished, it had usually to be completed before it was put away. I remember that my father paid for a quarter's lessons at one of the evening classes for me, but out of the whole thirteen lessons I was only able to attend two through being detained in this way.

An apprentice or improver is generally very glad to leave this work and try her hand in the West End. If she has made good use of her time, and applies for work at the right season, that is the end of March or the beginning of April, she can almost certainly get taken on as a season hand at one of the large dressmaking firms in the neighbourhood of Oxford Street, starting with wages of about 8s. per week. It is here that the girl's eyes are opened to the ways of the world. The beautiful materials so lavishly used, of which she hardly knew the existence before, completely dazzle her. The gossip that she hears of the private affairs of the grand customers, told by the knowing ones with all the hints and suggestions that are supposed to be understood, at first

shocks the girl coming fresh into it, and then excites a morbid curiosity unless she is of sufficiently healthy temperament to throw off the impressions as soon as she leaves the workroom and enters into some other occupation or recreation. This is a time that tests a girl's character very severely. There is a greater amount of a kind of freedom in this life, for, except in the matter of wages, every one is on terms of perfect equality. Individuality is completely lost sight of, and each one becomes part of a collective machine. It is soon discovered for what branch of the work a girl is most adapted. If she has the knack of doing small trimmings she becomes a sleeve hand, while if her fingers are light enough she arranges lace and soft silks so gracefully that they look as if they had fallen from the wand of a fairy. A costume with an immense amount of work in it, must, when all is finished, look as if hands had never touched it.

The fitter of the costumes is the forewoman, and is seldom a woman who has risen from the ranks of the workroom. She belongs often to the class of showroom ladies who have paid a premium to walk about in the front shop exhibiting a good figure and making themselves agreeable. But a West End fitter must have in addition great skill and immeasurable patience. Her salary ranges from two to seven or even eight guineas a week, and raises her far above the level of ordinary dressmakers. The wages of these latter rarely reach one pound, the average for a skilled workwoman being 15s. or 16s. per week. It is, however, impossible to get an average for the year except from an employer's wage-book, and this is not available to me. But even that would only show the wages of the most fortunate few who are kept at work all the year round.

The majority of the workers are simply season hands, and if they begin work at the end of March they will perhaps be kept busy until August. Then, if the firm is large enough to have more than one workroom, each room is closed in turn for a few weeks and all the superfluous workers discharged. They may get a few more weeks' work from October to December, but this is not to be relied upon. What they do until the season begins

again cannot be said. I know that some will be able to get enough needlework to do at home to keep themselves, but are obliged to let their rent run into arrears. Some get temporary work at the homes of people with families where they make up school dresses and children's clothes, and do the general repairs of a lady's wardrobe, being paid 2s. or 2s. 6d. a day and their meals. Others, like myself, live with a family who all share the pinch of slack times. But in addition to these, there are a large number unaccounted for, who, from pride or some other cause, are very reticent as to their mode of existence during the winter months.

On account of these fluctuations in the West End trade many dressmakers prefer to remain at the class of work with which they commenced. People, outside the circle of "Society," require useful dresses to wear all the year round, and the work is therefore much steadier. But unless a woman has had enough experience to give her confidence in cutting up other people's materials, she must be content to earn a much lower wage as an assistant, the average being from 8s. to 10s. per week only. Even then there will also be a few weeks slack time. Nevertheless, I doubt very much whether this is not better than the higher but fluctuating wage of the West End, because these places can mostly be obtained near home, and the cost of riding money and meals is thereby saved. On the other hand, since very little or no capital at all is involved in the business, one is always liable to be thrown suddenly out of work through the business being given up or removed to another district for domestic or other reasons.

One other class of dressmakers remains to be described. It consists chiefly of farmers' daughters who pay a premium to live in a fashionable dressmaker's house. It is, however, rapidly losing its class distinction. Twenty years ago as much as £100 would sometimes be paid to "Madame," who, in return, provided board, lodging and pocket money of 2s. a week for two or three years, and was supposed also to teach the business thoroughly. In many West End houses these form the only permanent hands, six or eight pupils being quite enough to carry on the business

during slack times, a number of day workers being employed to supplement the pupils in the busy seasons. A premium of £20 is now quite sufficient to secure one of these apprenticeships. When the term of apprenticeship is ended, a situation as indoor hand is frequently offered and accepted, the salary ranging from £8 to £20 a year in addition to board and lodging. But this system is dying out, partly because room in the West End is too valuable to be thus used, and partly because there is no prospect for a woman who has passed her youth, unless she can command enough capital to set up as "Madame" herself.

In this description I have endeavoured to generalise the chief features of the main groups into which the trade is divided, and to avoid all extremes and exceptions. The chief things necessary to a successful dressmaker may be summed up as considerable manual skill, and delicate fingers; a good knowledge of fabrics and of what can be done with them; the instinct of an artist to grasp the idea of a costume, and to work out the details without having everything set down in black and white; and a quick perception of, and adaptability to, the frequent changes of style and fashion.

So far I have dealt only with the hand dressmaker. I must now turn to the machinist. This is a very large industry, and in some directions it supplants all varieties of hand needlework. Machinists who work with the best dressmakers are paid daily or weekly wages, which average from 16s. to 24s. per week. They must, however, be exact and quick workers and know their trade and machine well to earn these sums. A false stitch by the machine will irretrievably ruin some of the fine fabrics, and often one might as well be a foot out of the line as an eighth of an inch. The heavier machine work, such as cloth mantles and tailoring, when paid for by the day or week, brings in from 18s. to 30s. weekly. This comparatively high wage attracts many to the work, but very few women can stand more than four or five years constant employment in this branch without their health being ruined. A great difference is made if only half the time is spent at the machine and the other half at hand work, and this is often arranged.

Apart from the best work, when garments are entirely, or almost

entirely, made by the machine, piecework is the usual method of payment. There are many factories in London and elsewhere for this class of trade. In some of them steam-power is used to drive the machine, and affords a great advantage so far as the health of the worker is concerned. The earnings at this work vary considerably according to the strength of the woman working the machine, and the class of work done. I know one factory where there are two young women who can earn from 18s. to 25s. a week each, at the piecework prices they are paid for the work. But among thirty to forty others employed in the same shop, on similar work, and at the same piecework prices, there is not one who can drive the machine fast enough to earn more than 16s. a week. It seems almost an inevitable law of this kind of work, that the coarsest and heaviest is the worst paid. I am told, that where corduroy trousers are machined and made, many of the women have to leave the work after a short time, stricken with paralysis or other nervous disorders, caused through driving the heavy machines fast enough to earn only 10s. or 12s. weekly.

There are many machinists who prefer to work at home, because they are not then bound by the hours of a factory or workshop. Some factories also have a system of giving out garments by the dozen to a machinist, paying her the whole price of the work when finished. She thus becomes a sort of sub-contractor, paying as many assistants as she can keep employed to prepare and finish off the work. Some of such sub-contractors can keep three or four women at work constantly.

Work of this kind which is given out to be done, either direct from the employers or through such a sub-contractor, is almost always badly paid, and any woman who has to live by it must work long and irregular hours. All kinds of articles, from handkerchiefs and pinafores to greatcoats and horse-cloths, are cut and given out from East End and City warehouses, by employers who are glad to get their work done cheaply, and to save the cost and trouble of workrooms and foremen. Anyone who can work a machine can get this work, a pattern garment to copy from being given out with the first order, and none of the workers know the

cheapest price for which it is being done. I freely give the hint that for this work it is best to hire a machine, since, by the time it is paid for, it will be worn out. I have seen recently the work-books of women who live by this sort of work, in which cotton dresses were shown to have been made right out for 7d. each, and boys' clothes, men's trousers, canvas working jackets and other articles were all paid for in proportion.

One such book, which I reckoned up, showed a total of 1,097 garments for eleven months' work. It included boys' corduroy trousers at 1¾d. each, knickerbockers at 3½d. each, women's stays at 4½d. each, and drill jackets at 4½d. each, and in every case the work was finished throughout before it was delivered to the warehouse. The amount earned by the worker varied from 6s. to 16s. per week, and averaged 10s. per week over the whole eleven months. As this amount was more than others could earn on similar work from the same firm, the woman was compelled, whenever she did more work than usual, to explain that she had had a friend working with her. The friend, however, was a pure invention. The fact was that she had worked, whenever she could get enough to do, from six in the morning until ten at night, but she did not dare to say so, knowing from experience that were it known that she could do so much by herself the prices would be reduced immediately. Another work-book from the same warehouse, which I examined, showed an average of thirty-one garments made weekly for a year and a half, for the sum of 5s. 1d. per week. During that period 3s. was the lowest amount earned in any one week, and 11s. 3d. the highest. It was principally contract work, much of it being for our asylums, infirmaries, and workhouses, and, of course, paid for by public funds.

And here I may digress to say something about Government contract work in general. It follows the rule of other work in being made and paid for under various systems. Some of it is made under good conditions and is comparatively well paid for, but the greater part is taken out by contractors and badly paid for, and it would puzzle even the shrewdest inspector to discover where the whole of it is made. The very cheapest part is taken

only by those hard up for work, and being so hard up they will accept any price, and resort to any trickery to retain the work. Large contractors keep the whip hand over their employees by having two systems of work in operation at once. A part is done in the contractor's own factory, and the rest is sub-contracted to middlemen and distributed by them to outworkers. Any attempt to organise those employed in the factory is met at once with the retort that "if we combine to ask for better conditions the work will all be sent away and we shall be worse off than before. Let us alone and go and organise the outworkers so that they will not work for less than us." But this is quite impossible. The only condition upon which the outworkers are employed is that they shall not complain of the prices. If they are not content they need not take the work. And so this system acts as an effective weapon with which to underpay and generally ill-treat the unfortunate workpeople.

So much has already been written and reported about tailoresses through the action of the "Sweating Committee," and the agitation against "home-work," that it is scarcely necessary to offer many details concerning their employment. Ready-made clothing is largely made by the machinists already described. The "bespoke" work of the tailors' shops, which abound in all parts of London, is made under the sub-division of labour system, sometimes in workshops in which the majority of the workers are women, and sometimes by tailors who take the work out, and employ women as "basters," "finishers," and "buttonholers," while they themselves press and overlook. As the quality and price of the work improves, so the proportion of men to women workers is steadily increased, until we find the very best work is made almost entirely by tailors in the West End shops. In this work tailoresses are only employed by outworkers, that is by journeymen tailors, who rent their own workshops or take work home to do.

It is said that women cannot do the best work. But among the outworkers there are many women who can and do take any part of the work, and when it is returned to the shop even a skilled

foreman is unable to tell that it is not the work of a tailor. One tailoress, whom I knew, rented a workroom in the West End, and employed six or eight other women to make trousers. She taught her husband (who was a tea warehouseman by trade) to press, and sent him to the shop to get the work out, knowing that it would not be given to her if she were to go and ask for it. Another tailoress has long been making, entirely by herself, the coats that are supposed to be the work of her father. The old man shows himself at the shop occasionally, but is too blind to do any sewing. Many similar instances could easily be quoted if they were necessary.

The recognised wages of a tailoress are from 18s. to 30s. a week. At present women rarely take the responsibility for the work, and are, therefore, usually assistants working under the direction of the tailor who employs them. The apparently high wage is the price for the skill required, and for the very seasonable character of the work. The seasons which prevail in the dressmaking trade control also the tailoring, and the men usually discharge all their women assistants as soon as they see the likelihood of not having more work than they can do themselves.

The women waistcoatmakers form a special class to themselves. They mostly live in the West End and take their work home to do, and they are paid by the same "log" or piecework list as are the men waistcoatmakers.[1] This "log" was drawn up and agreed to by a

[1] The "log" is properly a piecework list with a time basis. It consists of a detailed statement of the time that every article made should take to do. For instance, 8½ hours is the "starting" time for a waistcoat made in the plainest way. Then all the extras are detailed and so much time allowed for each. Thus in charging for a waistcoat the workman puts down say (1) starting time, 8½ hours; (2) basting to try on, 1 hr.; (3) extra pocket, 1 hr.; (4) watch-chain hole, ¼ hr.; (5) bound or stitched edges, 1 hr.; etc.: making a total of 11¾ hrs. Then he charges his time wages for the total number of hours worked.

The time allowed for every article is the same throughout all the West End shops. But difference in quality is allowed for by a different rate of wages per hour according as the shop is classed first, second, or third-class. The rate per hour is 7d. in first-class shops, 6½d. in second-class, and 6d. in third-class. Thus a waistcoat as above taking 11¾ hrs. to make would be charged 6s. 10d. for making in a first-class shop; 6s. 4d. in a second-class; and 5s. 10¼d. in a third-class shop.

joint committee of masters and men during the strike in 1891. The same "log" prevails throughout the whole of the West End, and men and women are both paid alike by it for waistcoatmaking. Any attempt by shops which have adopted this "log" to break away from it again is vigorously resisted by the Amalgamated Society of Tailors, which has succeeded in every instance in maintaining its prices since the strike. Before 1891 each shop had its own separate "log." A work-book I have by me shows the difference in prices at one shop before and after the dispute. During the month of February 1891, 18 waistcoats were made for £4 19s. 8d. In November the same year the price paid for 18 similar waistcoats was £6 4s. 8d.

Outworkers all find it necessary to employ someone to wait on their employers. They usually keep a young girl for this purpose. A foreman or cutter cuts out the work in the shops, and the shop-girl is sent to take it away to the outworker, together with a ticket of instructions. She has to take it back to the shop at the appointed hour, basted and ready for the customer to try on. When that is done she must fetch it away again to be finished, or for any necessary alterations. Sometimes the customer fails to keep his appointment, and the work then remains in the shop unfinished until he has been, perhaps a month or more later. The girls have to go to and from the shop and the workroom two or three times a day always, and more often if necessary. Thus, in reckoning up the wage-book of an outworker, the wages of a shop-girl must nearly always be deducted. I find that taking the average of a year a waistcoatmaker's book for a first-class shop shows the average weekly earnings to have been £1 6s. From this about 6s. a week must be deducted for a shop-girl, leaving the net earnings about £1 per week, the worker finding her own workroom, etc. The book from which I have taken this gives three years' work. The average is the same each year within a few pence, although the weeks vary very much according to the season, five or six weeks in each year being quite blank, and the highest earned in any one week being £2 13s.

It cannot be doubted that the lack of proper workshop accommo-

dation is the great evil of the tailoring trade. In large workshops where the commoner work is made, or in the West End where the ladies' work is made and women are employed, the accommodation is generally good, though some rooms that I have worked in could be much improved by the addition of some means of warming them during the winter months. The blood gets almost congealed for want of exercise, and we have often begged a hot iron from the presser, wrapped it up in woollen rags, and put it under the work-table, so that a number of us could stretch our feet near. The employers, as an excuse for the absence of proper heating accommodation, say that it does not pay to warm a large room for the sake of the few that may be at work during the slack time. The condition of the home workshops varies as much as the condition of the homes. In some cases care is taken that the floor is bare and clean and the rooms well ventilated. Others are in a state of dirt and closeness that can hardly be imagined. One tailoress I know, has been under hospital treatment for three months for blood poisoning and low fever, brought on by working in one of these places. There were six people, including two children, living in two rooms, one of which was the workroom. Two others besides this girl came to work daily. The smells were so bad that she took chloride of lime with her each day. Having been out of work for some time she tried to stay until she saw something better. A prick in her forefinger ended in the result I have stated, and her finger is now drawn up much shorter than the others and is quite useless for work.

Unfortunately, the local authorities, under whose jurisdiction the sanitary condition of workshops has been placed, are seldom diligent in putting their powers into operation. Most of them wait for a complaint to be made before they will take any action. It is, however, a risky thing for workers to complain, for it frequently involves the loss of their employment. Recently I quite unintentionally brought trouble on a work girl by writing to a local authority, about some sanitary defect, on note paper with the official heading of the Trade Union. I asked that it should not be divulged that any complaint had been made, and took the

responsibility on myself, not mentioning how I had obtained the information. About a week afterwards a message was sent up into the workroom asking who belonged to the Trade Union. Inquiries went on until the girl confessed, and, but for the fact that she did special work and could not have been easily replaced, she would have been dismissed.

I do not mean to assert that these cases of filthy workrooms are common; but there are too many in some degree like them. What is required is perfectly healthy sanitary workshops, and these are as rare as the opposite extreme. The present system of inspection will require great extension and improvement before we get that result. A large amount of nonsense is talked about invading the sanctity of the home. But workshops are not homes, and any place open to the employment of strangers, and in which work to be distributed among the public is carried on, should be open to public inspection. Not only for the protection of the worker is this necessary, but for the safety of the community as well. Frankly, I do not believe in the domestic workshop system at all. I am quite aware of all the cases in which we are assured it would be a hardship to abolish it. It is said that the poor dressmaker, with her one apprentice to run errands for no wages at all, should not be asked to leave her home to go to work. To this I answer, that if she has to depend entirely on herself, her home is neglected far more than if she had to go out to work. Her children run about the streets until it is time for them to go to bed, so as not to be in the way. Measles and other infectious ailments, easily contracted under such circumstances, are of necessity concealed. Work under these conditions is taken at any price, and often more cheaply than it would be done in a workshop. The difference is made up by working from early in the morning until far into the night. Hundreds of little apprentices, who have at least some right to consideration, since the Factory Acts include them in their provisions, are constantly being pressed to stay and help to finish work. These places are not on any employer's list of outworkers, and are practically unknown to the factory inspectors; and even if the officials did know where to find all of them, a whole regi-

ment of inspectors would be required to secure obedience to the law.

Women who work at home as an additional source of income are making it possible for their husbands to accept a lower wage than is necessary to support a family upon, and, in addition, compelling them to seek elsewhere for the comfort and rest they should find at home. I do not know the husband who likes to come home and find work about. Women who are too proud to go out to work should be compelled to live and die upon what their pride could obtain. Gentlewomen, who eke out small private incomes by taking fine needlework at starvation prices, deserve the severest censure, because they compel other women without the small incomes to work and to starve at the same prices. Working in a workshop together they could combine. A living wage could then be made on the basis of pay, and the small income would form an additional comfort.

Those who work in the cheap clothing factories suffer very keenly from the competition of the home workers, whom it is quite impossible to organise for a decent minimum wage. When they have reached so low a level that the smallest comforts, sometimes even the barest necessities, are beyond their reach, wages of any amount, high or low, must ever be their first consideration. Some will say that they prefer to see girls working long irregular hours amongst families, rather than that they should be exposed to the temptations I have described as occurring in dressmakers' shops. But to these I would reply that the temptation is incidental to the class of work, and is increased, rather than diminished, in the smaller workshops, because the employment is more personal and not so mechanical. I am confident that if it were possible to compare the morality of women in workshops with that of women working in homes, those in the workshops would not suffer by the comparison.

The question of what can be done to improve the condition of women workers is a very complex one, and even healthier and improved workshops would not entirely answer it. There are so large a number of girls and women who are only partially

dependent on themselves, and who do not expect to make their earnings the sole means of their support. Thoughtlessly they accept just what is offered to them, to the serious injury of the remainder. Education in simple economics is the best remedy for this, though the process is a very slow one, and in the meantime, men are very jealous of allowing women any new openings in other industries. Meanwhile the few in which they have already entered become more and more crowded every day. From the very nature of the difficulties presented voluntary effort on the part of the women is only practical in a very limited degree. The most that can be done is to form Trade Unions in the skilled trades where the workers are not easily replaced. This is being tried, and men, finding that it is impossible to stop the current which has once set in, and that the better way is to direct it in the right channel, are beginning to assist instead of to obstruct the organisation of women.

Voluntary effort among the employers is quite impracticable. Competition is the law by which they are governed. The competition of each bidder in the market to exchange his goods for something better than he gives, compels him to bury his human sympathy towards his employees. He finds that it pays to put a foreman or manager in charge of his business, who employs only the best workers at the lowest possible wage they will accept. The manager is frequently a kind-hearted man in private life, strictly honourable and trustworthy, and having these qualifications he will do his duty conscientiously. His heart will often ache when he has to turn away people who apply for work because they are too old, too weak, or too slow. It is quantity that is required, and he is bound to send the work elsewhere if he cannot get it done profitably. It grieves him that he has to treat employees as part of the machinery. If one of them falls ill, he would like to pay her wages till she is better, or to send her away for a few days change. But managers never have the power to do these things, and the most he can do is to perform his hard duty, softened with pleasant words. Unfortunately, however, he is often the reverse of pleasant, the very nature of the work producing a forbidding

aspect. In self-defence he bristles with sharp words and rough manners, so that appeals for sympathy and humanity, to which he knows he cannot respond, may be prevented. Small employers, if they wish to succeed, have to harden themselves to be their own managers. They say they are sorry they cannot pay more than other people, for their expenses are heavier in proportion than those of big firms. A compromise is frequently made with the workers to work for less pay and help to make the business grow, with a promise of more constant work when that time comes.

The large employers retire to their big houses and sigh over the former times when it was possible to feel friendly with one's employees. They cannot think what has changed working people now. Instead of being happy when they have got work to do, there always seems to be somebody in trouble or some complaint to hear. It is far better to leave all the worry to a manager, and let him do the best he can. Workers never seem to take any interest in their work now, and one cannot take any interest in them. That this is the case will be readily admitted, for the employers and workers who have been for any length of time in one employment will remember how different everything was when the business first started. The workers always believe that if they could only get hold of the "guv'nor," he would not be so hard as the foreman is to cut them down. Every new foreman comes with some new method by which expenses in wages may be reduced, because this is the only way to economise when every other expense is scientifically minimised.

Combination among the workers being therefore unlikely to succeed under present conditions, and combination among the employers dismissed as impracticable, the only alternative is a wider and more effective control of the workshops by legislation. Our present factory and workshop Acts are very good so far as they go, but they require many amendments before they will afford any efficient protection to the home and outworkers. One amendment making better provision for sanitation, and for the inspection of all domestic workshops, is immediately practicable and urgently required.

Further, the home workshops should either be compelled to be licensed by some proper authority, and employment in any other than duly licensed premises made illegal, or the responsibility for the proper sanitary and other conditions should be thrown jointly upon the landlord of the premises, and the giver out of the work done in them. Another alternative is that the present Acts should be applied to all home workshops. No doubt any of these plans would necessitate a considerable increase in our staff of inspectors. But it is useless having good laws, or attempting to perfect them, unless we are prepared to put them in force. There are thousands of small workshops in London alone, where isolated groups of two or three workers are employed, which are quite unknown to the limited staff of factory inspectors now at work. Yet it is urgently necessary, in the interests of the public, no less than of the workers themselves, that these places should be effectively dealt with in some way as soon as possible.

I shall not attempt to deny that any such further restrictions upon the conditions under which home work may be performed would tend to decrease the amount of work given out, and so force the workers more into large factories or workshops. Nor do I consider that such a course would be fraught with other than good effects to the workers themselves. If so drastic a change could be accomplished, we should quickly see the end of the "sweating," which is so common a feature in these trades. The health of the workers would be improved; their standard of comfort, and general morals would equally tend to rise; and as a result of their aggregation in large bodies with shorter and regular hours of labour, Trade Unions would become possible among them. Moreover, if work could be forced into authorised workshops, it would in some measure limit the employment of married women. I am convinced that the inconvenience to those of them who are compelled to work, would be more than compensated for by the increase of wages that would follow when the competition of the home worker was withdrawn. And it would be one way of making necessity draw the line, whether a married woman shall or shall not compete in the labour market.

For the rest, education must do its work, and education for the workshop should be included in the school work of girls as well as of boys, in addition to their education as housekeepers. If the time is too limited, it only means that another year or so would be well spent in school. Laws to protect them during their earlier working years are practically useless, unless they are made acquainted with them before they enter upon their working life. Another thing that might be done is to impress on girls the necessity of becoming skilled in some industry or profession in the same way that boys are expected to do. This would do away with the argument, that women compete unfairly with men by being only half-trained. The knowledge so gained will not be wasted, if they should choose afterwards to be wives, instead of to spend their lives in the industry or profession so learned. They will understand better the difficulties their husbands and children will meet with, and instead of being the ignorant servants of the household, they will be qualified to fulfil the wider and happier position of helpmate and guide.

WORKERS IN PRECIOUS METALS.

By W. Augustus Steward, L.T.C., Secretary of the London Silver Trades Council.

GOLD, the brightest and purest of all metals, is, like iron, found in every quarter of the globe. It exists in small quantities in Scotland and Wales and among the tin mines of Devon and Cornwall, while it was discovered in Ireland at a very early date, being the first metal with which the inhabitants of that country were acquainted. It is very ductile and easily preserved, and is not injuriously affected by chemicals or by frequent melting or casting. Wherever found it is always of an equal substance, and whether it is discovered alloyed with iron, copper, or other metals, silver is always to be found with it, in varying proportions. When found with silver alone it is called "native," and in this form is its principal commercial importance.

Silver is sometimes found in a state of purity, although it is more frequently associated with other less precious metals. In some cases where it is found with gold, it preponderates so greatly as to exhibit but slight traces of the more precious metal. There are few metals that can be found in such variety of natural combinations or over so wide a geological area as silver. Slight traces of it are even said to exist in some organic bodies and in the waters of the ocean.

We are unable now to trace when gold or silver were first worked by the smith, or ornamented by the chaser, engraver or enameller, although it is certain that from a remote period in the world's history these precious metals have been used as articles of personal, architectural, and household utility and decoration.

According to Sir John Lubbock[1], no trace can be found of the knowledge of any metal in the stone age except that of gold, which seems to have been occasionally used for ornaments. In the bronze age gold must have been used, for, although the ornaments were generally made of bronze, articles of personal decoration have been discovered in which small quantities of gold were inserted, while, upon closer examination, it appeared that other articles, for use and ornament, had been engraved.

But if we desire to trace the history of the precious metals in historic times, we shall naturally turn first to the records of that strange and weird land which we call Egypt. There can be little doubt that the Egyptians employed gold in the decoration of the palaces of the rulers of the earlier dynasties. One tablet survives which mentions works of gold and silver, and the "House of Gold"; and the monolithic columns, which we call obelisks, were ornamented on the base with thin plates of gold. The cartouche of Rameses III. has been discovered by Captain Burton in some of the disused mine-workings, as well as one of a much earlier period in the Sinaitic peninsula. And it is generally agreed that the gold mines of Midia were worked by the Egyptians.

Many examples of the work of the Egyptian goldsmiths are to be seen in various museums, and among the most interesting of these valuable relics is the set of gold ornaments, some of which are engraved and jewelled, found in the case containing the mummy of Queen Ah-Hotep, who died over three thousand years ago. Sir A. H. Layard[2] has warned us that much of what was called gold by the Assyrians and sacred writers, was, in reality, nothing more than copper alloyed with other metals. Yet, notwithstanding this, the Assyrian Empire was remarkable for its use of precious metals in the decoration of its buildings and temples. We are told that in the temple of Jupiter Belus in

[1] See "Pre-historic Times," by Sir J. Lubbock. London: Williams and Norgate, 1878; 18s.

[2] See "Nineveh and its Remains," and "Fresh Discoveries at Nineveh and Babylon," by A. H. Layard. London: Murray, 1848-9, 1853. [Both o.p., but copies may be seen in the Library at South Kensington Museum.]

Babylon, there was seated a golden image of immense proportions,[1] the throne and base being of gold, while a large table and pedestal in the porch were made of the same material.

Contemporary with the Assyrian Empire was the Kingdom of Israel. We learn that when Abraham went up out of Egypt, he was rich in gold and silver, as well as in cattle. The gold was not only in ingots and dust, but also worked into ear-rings and merchandise. And among many other instances of the use of precious metals to be found in the Old Testament, we may refer to the glowing account of the Tabernacle and its furniture, to be found in the First Book of Kings.

But far more important that any nation which has yet been mentioned are the Greeks and Etruscans. Of their most beautiful, delicate, and intricate work we can speak with greater certainty, having much more to rely upon both in objects, and the descriptions of ancient and classical writers. When the Greeks first began to employ the precious metals cannot now be definitely fixed, but the works of Homer contain frequent references to their use both for personal and architectural adornment. Thus Achilles is credited with the possession of a beautiful golden shield. Golden armour is exchanged between Glaucus and Diomede. While the delightful and entrancing account of the Palace of Alcinous describes how—

> "Rich plates of gold the folding doors encase,
> The pillars silver on a brazen base,
> Silver the lintels deep projecting o'er,
> And gold the ringlets which command the door.
> Two rows of stately dogs on either hand
> In sculptured gold and laboured silver stand."

Nor can this wonderful picture be attributed entirely to the vivid imagination of the poet. The discoveries of Dr. Schlieman,[2] at

[1] It is extremely likely that this image was of wood covered with embossed or engraved sheets of gold, as were those produced by the Egyptians and, at a later period, by the Greeks. Herodotus mentions this temple, but is careful to state that he knows only upon hearsay from the Chaldeans that it was of gold.

[2] See "Mycenæ and Tiryns: narrative of Researches and Discoveries," by Dr. H. Schlieman. London: John Murray, 1878; 50s.

Mycenæ and other places, of gold breastplates, helmets, belt buttons, etc., tend to show that it was based upon actual decoration and articles of use existing at that time. It may be mentioned, too, that the size, weight, and number of the articles found, prove, according to some archæolgists, that the goldsmiths in those days kept fairly large stocks of wrought gold and silver.

Passing rapidly over the history of Greek art until the time when the beautiful temple of Pallas Athene crowned the Acropolis at Athens, we find that beyond its faultless symmetry and matchless proportions, there was opportunity not only for colour, but for metallic decoration. On the parthenon can still be seen the holes in which the various metallic ornaments were fixed.[1] As we look on the ruined remains we can endeavour to realise the bright new pillars, the glistening shields, and the chryselephantine statue of Athene, the latter the work of Phidias, with its "soft creamy beauty of ivory flesh," and "golden raiment and crested helm." These have long since disappeared, scattered by the sacrilege of the tyrant Lachares, who, we are informed by Pausanius, took them with him when he was driven from Athens.

The conquerors of the Greeks regarded art as a respectable exotic, but there is a mass of evidence showing the many uses for which precious metals were still employed by them. Both the home and public palaces were decorated with them; they were used for architectural decorations and for personal adornment. The most beautiful specimens in the treasure of Hildesheim show their use for domestic purposes. In architectural ornament their use is proved by the evidence of Pliny and Livy as to the golden house of Nero, and the gilded statues and trophies which graced the forum of Trajan, and by that of Ovid, who, in the Fasti, speaks of the "flames kindled on the altars irradiating the gold

[1] These were fixed in such a manner as to render removal easy. This we learn from a story which shows also that a subject of complaint in later years, the alleged appropriation of the precious metals by the craftsmen, was not unknown in those days. Phidias was accused of having appropriated some twenty-four talents of the gold, and he cleared himself and Pericles of the charge by taking the ornaments down and weighing them.

of the temples." Silver was used in Rome to decorate all kinds of furniture, bronze articles, such as beds and chairs, being damaskeened with gold and silver. And not only were the chariots and horse harness of the wealthy silver-plated, but we are told that Nero's wife had her horses' hoofs shod with gold, and that Caligula's wife adorned herself with over £30,000 worth of jewelry. Gold and silver statues, too, were made and carried in triumph before the emperors.

This period of showy opulence and enervating luxury came, however, to an end at the close of the third century, and, in common with the other arts, that of the gold and silversmith rapidly declined. With the death of Alexander we can trace the gradual and general decay of the fine arts, which had been so successfully developed by the Greeks and fostered by the Romans. Final death did not, however, occur until some straggling branches had been planted at Constantinople, where their new environment modified and altered them.

The productions of the Eastern Empire cannot be compared with those of Greece and Rome. Byzantine art lacks the energetic and yet elegant beauty which so much entrance us in the work of the Greeks. The absence of artistic efficiency and of national enthusiasm cannot be compensated for by ostentation. The Byzantine artists thought this was possible, but although they used metals, gems and enamels profusely, in addition to coloured glass and pastes, their efforts were unsuccessful. In comparison with the charming delicacy of the Greek, the Byzantine produced heavy and almost clumsy complications. During the lengthened period between the ascendancy of Byzantine, and the revival of art in the eleventh century, the work of the goldsmith and jeweller was, with few exceptions, of an enfeebled character. One, however, of the most important of these few exceptions was the work produced by the Saxons during the fifth century. Perhaps, therefore, it will be convenient here to turn to the history of the working of precious metals in our own land, and endeavour to trace the story of our craftsmen's lives and work.

The remains which have been found of the Romano-British workmanship of the fifth century are of a very degenerate order, being nothing more than debased imitations of the productions of Rome and Constantinople. Owing, probably, to the privations and confusion of the Britons resulting from their rout by the Saxons, native art, including that of the workers in precious metals, decayed and perished. The Saxons, however, appear to have been at this time very skilful in the manipulation of the precious metals, and Mr. Roach Smith informs us that "Saxon jewelry from the middle of the fifth century shows in artistic merit, and in style and design, a closer relationship to classical or Roman art than that from any other part of the kingdom."[1]

Before the dissolution of the Heptarchy by Egbert, the goldsmith's art in Britain was in a very flourishing condition. Athstan, Bishop of Selborne, who lived about 500, had an enamelled gold ring. King Oswald, in 691, is said to have endowed the churches with every variety of goldsmith's work. Before 700, Wilfred, a Northumbrian bishop, invited French workmen to England, and was possessed of many jewels and much plate. Later, William of Malmsbury describes a shrine given by Ethelwolf, the son and successor of Egbert, to the Abbey of Malmsbury. The gold ring of Ethelwolf in the British Museum, bearing his name in plain Roman, shows that Champlève enamelling was practised during the eighth century. In the ninth century we find that filagree or Cloissoné enamelling was practised, by the fine example bearing the statement that "Alfred ordered me to be wrought," which may be seen in the Ashmolean Museum at Oxford. It is of gold, richly worked with chasing and engraving, the face being formed of crystal, four-tenths of an inch in thickness.

If we now turn to the work produced in Ireland during the ninth and tenth centuries we shall find that the Irish craftsman entirely eclipses the continental worker in precious metals. Ireland at this time was producing some most beautiful and deli-

[1] See "Metal Work and its Artistic Design," by Sir M. D. Wyatt, London, 1852.

cate specimens of the goldsmith's craft. It has already been mentioned that evidence shows that gold was the first metal with which the inhabitants of Ireland were acquainted. They made good use of it, for numerous examples bear witness to the excellence of their productions. Objects for personal adornment such as brooches, armlets and gorgets, and articles for the use of the church such as chalices, book covers and croziers, all prove that the Irish craftsman was unrivalled in his work. A large number of the objects discovered are decorated with twisted wire-work, some forty varieties in design being noted. Unfortunately commercial iconoclasts have been at work, and the great bulk of these interesting objects have been consigned to the melting-pot during the last fifty or sixty years.

Turning back again to England, we have to pass over the successors of Alfred—Edward and Athelstan—history having little to tell us in regard to the position of the arts during these years, or their attitude towards them, and come to the history of St. Dunstan and his French contemporary St. Eloi. Both were reputed to be goldsmiths and metal workers, in addition to holding prominent positions as ecclesiastics. St. Dunstan died in 988, and although it is certain that he was a generous patron of the metal crafts, it is doubtful if he ever actually worked in them. At any rate no well authenticated specimens of his handicraft exist. There are, however, several pieces in different institutions, principally in France, credibly attributed to St. Eloi. We learn little from history of the condition of the craft during the Danish dominion, although a silver cup was found near Lancaster in 1815 which is supposed to belong to that period. It is finely engraved with ornaments and figures of a very spirited character.

The absence from England at the Norman Court of Edward the Confessor had the effect of modifying, by Norman influence, the character of the Saxon work. We are not in a position to say much as to this period or that of Stephen, Richard I., or of John, although it is well known that John was passionately fond of jewelry. Up to this time the workers in precious metals were engaged almost exclusively in the production of articles for the use

of the church, and it will be interesting to note that the earlier kind of chalice, a sixth century specimen of which in gold, decorated with enamel, is to be seen in the Public Library in Paris, was a large and capacious cup, corresponding to the two-handled vases depicted upon the walls of the catacombs of the early churches. In the thirteenth century a change occurred, as is shown by a beautiful example of this date to be seen in the British Museum, the spreading foot with small bowl and a substantial boss upon the stem coming into fashion. Patens were originally very large, and used as basins for the reception of offerings. We read of one weighing 30 lbs. But by the twelfth century they became flat plates, and by the thirteenth decoration is discontinued except upon the outside. There are not any known specimens in existence of this date, the earliest to be seen in South Kensington Museum being of the fourteenth century.

In the thirteenth century, Henry III., the king who stands out from among the rulers of England as the lover and patron of art, was carrying out the great object of his life—the building and adorning of Westminster Abbey. On the shrine of Edward the Confessor he spared neither riches or time. Thus we find that in 1241 the king gave directions for a sufficient sum of money to be used for the support of the goldsmiths employed in the decoration of the Abbey.[1] But the golden shrine, adorned with jewels varying in value from fifty to three hundred sovereigns, has been denuded of its treasures; the altar front looking like a dead old oak

[1] Mention is made in connection with the building of the Abbey of one "Otho" or "Odo," "the goldsmith." It was he who received the instructions to pay the goldsmiths working there. But, from the data at hand, it appears probable that he was a banker, interested financially in the undertaking, and not a smith, as we understand the word. However, we find mention of two or three who were without doubt smiths. William of Gloucester, who produced among other objects a silver statue of Princess Catherine, is mentioned. One Torrell, also, is credited with the monument to Henry III. and his wife Eleanor, still in the Abbey. Other men there were, too, whose genius and ability combined to make the Abbey beautiful, but those we have mentioned appear to have been the most prominent of the craftsmen employed.

now, in comparison with the descriptions of its building and adornment. There are still a few of these old altars and altar fronts of gold in existence upon the Continent, which show that the metal was used in large masses as well as in a painstaking manner at this period.

It was about this time that the formation of the Gilds was begun on the Continent. In our own country this movement had occurred somewhat earlier, the English Gilds ranking among the oldest of such institutions. Already in the twelfth century a powerful Gild of goldsmiths existed in London, and in 1180 it was, with other such Gilds, fined for having been established without the king's license. The organisation was not, however, affected thereby, and in the middle of the thirteenth century the goldsmiths formed a large and powerful body. In 1300, power was conferred on them to assay articles of plate and jewelry, and mark them with the now well-known sign of the Leopard's Head, still maintained as the London Hall-mark. They were also to supervise the trade, and to this end were invested with power to visit the different shops of the workers in precious metals, as well as country fairs, and seize any gold or silver articles of an inferior quality which they chanced upon in their perambulations. Offenders were to receive dire punishment. Nailing by the ear to the pillory, the loss of the same member, and as an extreme, death, being prescribed for them. The Gild or company did not, however, receive its charter until 1327, in the reign of Edward the Third.

In the thirteenth century, the craft found a new form of employment, as the different kings, princes, and nobles vied with one another in the beauty and value of their domestic appliances and personal adornments. From the evidence adduced, it would appear that the craft in England reached the height of perfection during the thirteenth and fourteenth centuries. During the fifteenth century, the excellence of all art is on the decline. It is stated that Henry VI. had some fine jewels, but nothing remains to enable a judgment to be expressed. Handed down from the reign of Henry VIII., we have the designs of Holbein to charm us,

the beautiful one of a cup for Jane Seymour, to be seen in the print room of the British Museum, being almost matchless in its delicacy and artistic excellence, while his jewelry designs are of everlasting use and interest. But during the reigns of Edward VI., Mary, and Elizabeth, little or no progress was made; and during the time of Charles I. and the Commonwealth, the English school of plate working was maintained by a Dutchman commonly known as Viani.

The Restoration brought with it weak copies of Louis XIV., and though during the reign of Queen Anne attempts were made to raise the silversmiths' branch, from that time to the present day the history of the craft in England is not one of which we can be proud. We may pride ourselves upon the work of Paul Lemière the designer and smith who flourished in the first half of the eighteenth century; or of Hogarth the heraldic engraver and realistic painter; or of Flaxman and Stothard as designers; and later of Morel Laudeuil the designer and repoussé worker. But with these few exceptions the fact has to be deplored that the work produced in precious metals has not been, either from the artistic or technical standpoint, of a very high order.[1] Nor can it be favourably compared with the work produced a few centuries ago, or even with some of the much earlier specimens, or with the productions of some of our continental rivals.[2]

In the goldsmiths' branch the deterioration has not been so apparent or taken place with such rapidity as in the branch devoted to the working of silver, which, indeed, has been described as the most degraded of all English crafts. But the chief factors in

[1] Some exceptions to this general rule may no doubt be made. The Messrs. Elkington for whom Laudeuil worked, and Messrs. Garrards, Watherston, and Hunt and Roskell are notable for the general excellence of their work in the earlier half of this century. They are, however, too few to redeem the general character of the work produced.

[2] For a more complete history of the art of metal working, the student is advised to consult Sir M. D. Wyatt's "Metal Work and its Artistic Design," and his "Observations on Metallic Work." London, 1852, 1857. [Both o.p., but copies may be seen in the Library of South Kensington Museum.]

the degradation of the silversmiths' branch—the keen competition, the organisation of the trade on a large scale as a factory industry, the sub-division of labour and consequent loss of individuality, together with a grave lack of efficient technical training in the workmen, are now operating with great force in the goldsmiths' branch as well as in those of the general chasers, engravers and enamellers, and bringing them all to a much lower level of quality in work. Nevertheless, there are among our goldsmiths, silversmiths and jewellers some of the finest craftsmen in the world, whose work would compare very favourably with any which could be brought against it. But just as bad money drives good money out of circulation, so bad work drives good out of the market, and consequently there is little demand for their services. The time was when the worker in precious metals designed and carried out from start to finish works of art, loving art for its own sake, for he was inspired with a spirit of national or religious pride. The individual craftsman was then recognised and known to the public, and thus received one of the best incentives to the production of good work. To-day, we have the one great craft divided into many, and these again into numerous sections, amongst them being designers, modellers, gold and silversmiths, chasers, engravers, enamellers, carvers, piercers, gilders, burnishers, polishers, colourers, mounters, setters, lappers, spinners, stampers, assayers and refiners. The silversmiths' branch is divided into three main bodies of men, "large workers," "small workers," and "spoon and fork makers." The polishers are again divided into plate polishers and spoon and fork finishers. And so we might go on tracing the division of industry which has completely revolutionised the silversmiths' branch, and very largely that of the goldsmith and jeweller.

In the goldsmiths' branch, indeed, the position is rapidly becoming intolerable. In the large factories or workshops where the ordinary kinds of gold work are made, the division is found to be even more complete than in silversmithing. In the production of a brooch or bracelet several boys are employed under the charge of one man. Each boy is taught to make or work one

particular part of an article. When all the portions are ready the man puts it together and gives the finishing touches before it goes into the hands of the polisher, colourer, lapper, or setter. The lads so employed are cast adrift, unfit to take their chance as competent workmen, and become tram-car conductors, porters, or other unskilled labourers. It is largely the growth of this most obnoxious form of sub-division of labour, known as the team system, in the trade, which has caused the goldsmiths to form their newly established Trade Union. They hope, if not to abolish the system, at any rate to prevent any further extension of it.

I have stated what I consider to be the chief factors in the deterioration of the craft, and which have engendered the obnoxious systems of scamping and sweating. What are the results when viewed from the artistic or ethical standpoints? As the economists have repeatedly acknowledged, one of the greatest drawbacks to the system of division of labour is the lack of interest in the general appearance of the whole article, or even in their own particular portion of it, engendered among the different classes of workers. The need of interest is a most important item when we consider the position of the craft we are now reviewing. In a trade which demands both skill and artistic ability, and which calls for the careful consideration and work of the craftsman, the lack of interest resulting from the present system does not augur well for the future of the craft. The division of industry has tended more and more to make the workmen machines, and has restricted their scope and confined them within the narrow limits of the work they have been set to continually perform. To live is to change. As Ruskin puts it, "a person could not live without change; not a tree or a leaf could live without growth: that might be taken as the great rule of all living art." Surrounded by gross conditions, the workmen are lacking the general technical knowledge which would do much to broaden their view of the theory and practice of the craft as well as of life.

Unfortunately, to make things worse, the breakdown of the

apprenticeship system is also taking place. It may be that the old forms must give place to new, but the effect upon the craft is far from beneficial. The master has no longer the same interest in the lad as before. The workmen in the shop or factory often look upon him as an interloper, especially when there are a good many lads and the master obtains the benefit. On the other hand, when the men gain either the whole or part of the benefit, they are satisfied to use the lads as machines to make "good weeks" for them, careless of the fact that they are ruining the lads' chances of becoming proficient workmen, and then to turn them adrift when age prompts them to demand more money. This is more prevalent in the goldsmiths' branch, and is the outcome of anti-social conditions, and the industrial warfare which makes us enemies even to our own class.

The Ishmaelitish policy pursued by most of the manufacturers and retailers has also acted in a degrading manner upon the workmen. The articles must be produced quickly and showily, and good substantial work and careful decoration are to be shunned. In some cases, manufacturers and one or two retailers have fought hard for the production of good work. Unfortunately, their good intentions have been frustrated, and a cheap and nasty policy has triumphed. Nevertheless, in spite of the keen competition among the manufacturers, and the shrewd way in which the retail shopkeepers have pitted them one against the other, the prices of articles sold to the public do not appear to have diminished very rapidly or in a very marked degree. Many will remember the tenacious arguments, urged and urged again, that the abolition of the duty on silver plate would give the trade an enormous impetus. We are still waiting in this long period of depression for the impetus. Indeed, it seems to be farther off than ever, and perhaps is being somewhat delayed by the retailers, who have not given the public the full benefit of the reduced price of silver.[1]

The future of the trade is a very wide question, and one of

[1] The duty of 1s. 6d. per ounce on silver and 17s. on gold plate, including wedding rings, was abolished on April 30th, 1890.

serious importance. We must recognise that two things are essential to its existence and development: firstly, a scientific system of education of a theoretic and practical character for the workmen, especially the younger ones; and secondly, the education of the consumer or user of the articles produced. In fact, this, like most of the other problems agitating our minds to-day, is a social as well as a workshop question. If we consider the manufacturers and retailers competing for each others' work, the tendency to concentrate the retailer's shops into a few hands, the effects of competition among the men, the sacrifice of the best years of many lads' lives in the team system, the evil methods of remuneration in many branches of the trade,[1] and the unsanitary and unhealthy condition of many of the workshops, we may well pause to ask ourselves the probable effects of all these anti-social conditions upon workshop morals and national ethics. Nor can we wonder that these worst features of a new industrial system should make such inroads into the sphere of the beautiful, blunting the sense of taste and beauty in producer and consumer alike. The selfishness exhibited in trade has an evil effect, not only in the warehouse and workshop, but upon the political and social life of the State, and it is clear, that while such conditions as now prevail so largely in these trades continue, there must be a complete absence of enthusiasm for, or even appreciation of, good work.

Competition having cut down the quality of the work and the manufacturers' prices, wages have been forced to follow. The process has been rendered easier by the want of cohesion among the workers themselves. During the last twenty years, however, Trade Unions[2] have sprung up in many of the sectional branches

[1] It is impossible in the brief scope of this paper to attempt to deal adequately with the methods of remuneration in the trades mentioned. Almost every known variation of the two main forms of time and piece wages exist in one or more of the numerous sections into which these trades are sub-divided.

[2] These are not the first Trade Unions in the silver trades. In 1838 the Committee of the United Branches of the Silver Trade sent a subscription to William Lovett's "London Trades Combination Defence Committee,"

of the industry, and efforts have been successfully made to stop further inroads into the workers' wages, and in some cases even to increase their earnings. But, unfortunately for this purpose, the trade is in a very transitional state. The factory system has made but slow progress in the gold and silver trades until almost the last few years. Thus, on all hands we see old forms and new ones side by side, and where, as in the designers', engravers', chasers', carvers', and enamellers' branches, the men work in small workshops scattered over the whole of the town, and where also a large number are "garret masters," who are used and pitted against the indoor workmen, the greatest possible difficulty is found in organising them for their mutual benefit. But where the factory has superseded the small workshop, and brought the various workers into closer touch, giving them a first taste of collective life and production, the tendency is to produce a spirit of brotherhood born of a knowledge of individual weakness and interdependence. Indeed, to factory life, with all its drawbacks and needful reforms, which, however, are capable of being grappled with and solved, we owe the workers' opportunity to organise and to make for the goal of industrial and political freedom. To it, assisted also by well directed legislation, we must look for the abolition of the pernicious system of sweating in every branch of industry.

At the present time there are, besides several benefit societies and a pension society, seven Trade Unions in the silver trade. These are the societies of the plate workers, small silver workers, spoon and fork makers, chasers, engravers, plate polishers, and spoon and fork finishers, all having a bond of union by affiliation to the Silver Trades Council, and recognising the interdependence of the workers generally by sending a delegate from each society to the London Trades Council. The Silver Trades Council is eight years old, having been formed soon after the establishment of the Plate Workers' Society in November 1885. The other societies

as did also the Committee of the Silver Spoon Makers' and Finishers' Society. Nothing further is now known of these two organisations, which died away and disappeared before 1872.

affiliated have been established for periods varying from three to twenty years, the oldest being the Spoon and Fork Makers Society, and the Silver Spoon and Fork Finishers' Trade Society, both established in 1874, and the other four all springing up during the last five years. The plate workers have at length succeeded, after overcoming many difficulties, in thoroughly organising their trade. The boy question, to which I have referred, has been amicably settled by them in conference with the employers in the trade. They have gained many needful reforms, have increased wages by as much as twopence per hour, and have been the means of establishing a better understanding between masters and men. The same is the case with the Spoon and Fork Makers, who have also the strongest reserve fund of all the societies in the trade. The Small Silver Workers form a much younger society, which is, however, almost as strong numerically as the Large or Silver Plate Workers, and has, notwithstanding its comparative youth, succeeded by collective efforts in doing much to improve the conditions of the men in this branch.

The chasers and engravers have been the last to discover the value of unity. Their societies are both very young, and the greatest difficulty has been encountered in organising them, owing to the systems of home and out-working which prevail so largely in their branches. Notwithstanding this the societies are not to be daunted, being both in a healthy, financial condition, and likely to give the other societies in the industry a lesson by amalgamating their forces.[1]

The plate polishers, and spoon and fork finishers perform the dirtiest operations in the trade, and those who read the accounts of the bad conditions under which work is carried on in various industries have not imagined that the men and boys, and, in a few cases, the girls, who produce the bright and attractive coloured silver goods, have to work often in small dirty shops

[1] This has since been accomplished, and the two societies were united on Feb. 14, 1894. The Electro-Plate Operatives have also a London branch of the Birmingham Society, but as they are not regarded as part of the silver trade I omit reference to them.

badly ventilated, with bad sanitary conditions and conveniences. Trent-sand, lime, and rouge float in the air, causing discomfort and injury to the workers' eyes, ears, nose, mouth and lungs. Indeed this branch of the industry must be classed amongst the most unhealthy in London. Its workers, however, have now their organisations, which have already done much to assist them. Many of their members are cognisant of the limits of Trade Union efforts, and are consequently in favour of legislative interference.

The goldsmiths and jewellers of London made an attempt in 1874 to form a trade society, their primary object, as set forth in their rules, being "To unite in one great body the workmen in the gold, silver, and kindred trades for the general good of the association." [1] This society was the first in the precious metals trades to register itself under the Trade Union Act of 1871, and it published a high-class trade journal. It was popularly known as the "fifty hours society" owing to the fact that it made the shortening of the hours of labour its chief object. Unfortunately this good resolve became a source of weakness, for a large number of the masters offered the men a slight increase in wages in lieu of shorter hours. The sympathies of the men were thus alienated from the society, and what had seemed to give every promise of success became a speedy failure. About fifteen months ago a number of the workmen, dissatisfied with the condition of the goldsmith and jeweller, resolved to try again to organise for their general protection, and especially to endeavour to cope with and settle the boy question, which is a menace to well-meaning masters and decent workmen in these trades. Their efforts were crowned with success. A society was formed and registered in September, 1893, and can boast after twelve months' existence of

[1] The Goldsmiths' and Jewellers' Trade Association. Its rules provided a scheme of technical education for youths in the trade, as well as a sick benefit and trade society for the men. It also was not the first organisation in the trade, a previous one having been in existence in 1834-40, of which, however, little is now known. There are also in this branch of the trade several benefit societies, and an Annuity and Asylum Institution

over 500 financial members out of a possible 1500. This society admits "goldsmiths, jewellers, setters, and male polishers."

Women are not admitted into any of the societies. In most branches of the silver trade very few women are yet employed, and the question has therefore never arisen; but in the case of the goldsmiths, their rules are so framed that women polishers, of whom there are a large number employed, are excluded from membership. It would, in my opinion, be well for all concerned if women were treated on a fair and equal basis with men, and until they are thus treated, should they do work which, through cheapness, is detrimental to the interests of men, or should they be otherwise unfriendly, the men cannot well complain.

Among the many useful things the different organisations can do, not the least is that of assisting in every possible way to push the question of technical education. This, indeed, is the only means of filling the void left by the break down of the old apprenticeship system. The majority of the men are fully alive to the necessity for such education. They are aware of the condition of affairs occasioned by the decay of the apprenticeship system, and are really anxious to see technical institutions springing up all over the different towns in which their industry is carried on. But they must be within easy reach. Inducements must be offered to the young so as to interest them,[1] and, in order to find favour with the men, they must be supplementary to the workshop and not a substitute for it. In short, they must not be places, as some are, for the wholesale manufacture of incompetent "jacks-of-all-trades," who can be used as a means of cutting down wages and lowering both the standard of living and of work.

It is true that the Goldsmiths' Company have built and endowed a large school at New Cross, but they have never had a single class in gold or silversmith work there. Indeed, when we are told that the Goldsmiths' Company have provided all that is

[1] In this direction, the suggestion made by the writer of the first paper in this volume, that apprentices or other youthful learners should be allowed one or two afternoons per week in which to attend technical classes on their trades, would, if carried out, prove of the utmost value.

necessary for the instruction and assistance of the young in the craft, we are simply amazed, for it is wanting in common judgment to place an institute so far away as New Cross, when the bulk of the men and boys interested work in Clerkenwell, the City, or West End, many of them living in the far north or south-west of London, and very few indeed anywhere near the institute. Even free railway fares with supper thrown in would not tempt men or boys, working nine or ten hours daily, to spend at least another four going to the institute and back.

Practically, therefore, the industry is without any real assistance in technical instruction. On the Continent, we find a large number of institutions accomplishing wonderful work. At Birmingham many classes are being held, and every young craftsman can go to the Municipal School and gain such extra knowledge of the theory and working of the craft as will enable him to successfully emulate the work of the great artists in the precious metals. The good effect the schools have had upon the workers in Birmingham is apparent in their productions, and it is for the Londoners to awaken to the same spirit if they would continue to hold the supremacy over what we contemptuously and sometimes unjustly call "Brummagem stuff." The only genuine attempt to assist the youth in the various branches of the craft in London is being made at the Polytechnic in Regent Street. There the chaser and repoussé worker can obtain assistance and instruction from one of the finest chasers in England. The goldsmith and jeweller has also an able and painstaking teacher to take him by the hand and help him. For some time a silversmiths' class was conducted there also, but it has had to be abandoned, not through any fault of the students, but because of the teacher's inability to continue his instruction. Unfortunately the reward offered to teachers in almost every branch of technical education is so small, that few good workmen will leave the bench to engage in an occupation affording them less remuneration than their employment in the workshop or factory. In some instances workmen have been found willing to take a class after their ordinary day's work is done; but should one of these become busy, his class stops or is put back for a time. Another

reason why it is difficult to obtain the services of good men is, that those who do take classes receive no recognition from those who are erroneously looked upon as leaders in the trade. Thus the goldsmiths' and jewellers' class at the Polytechnic has been continued, and the students have been very successful, in spite of the very slight recognition given by the Goldsmiths' Company. Even this, however, in common with other classes, depends upon the opportunities of those who give their evenings to assist in the excellent work of technical education. Is it not possible to hope for a good central institution, under the control of some democratically constituted authority, such as the London County Council, where first-rate instruction could be given regularly? This is a question which the public must answer, and one to which in the near future an affirmative answer must, I think, be given.

While agitating strenuously for a genuine system of technical education, we must not forget that the Royal Academy needs waking up to a sense of its national responsibilities. In France, the silversmith is encouraged by the nation, and the Salon has its section for silversmiths' work. If the decorative arts of painting and sculpture are worthy of recognition and encouragement, surely the art of the gold and silversmith, which is one both of utility and decoration, should have a similar measure of encouragement and support. To-day we have the finest chaser in England exhibiting at the Academy in portraiture and sculpture, yet his finely modelled repoussé on silver or gold plate would meet with very little encouragement if it was submitted for exhibition.

Many other pressing questions call for the immediate attention of the workmen and their societies in these trades. Some of these are such as cannot be met by other than legislative action. The employment of boys and girls calls for a closer inspection by the factory inspector. This is especially so in small shops, where all kinds of metal work is finished, and boys of twelve are to be seen sifting lime through a fine muslin sieve, their eyes, nose, mouth, and ears, being in a most distressed condition, through the action of the particles of lime which are constantly floating around them. This method of fining is not necessary, for the same kind of

machinery as that used to grind mustard could be employed for the lime. Then also, the condition of many of the workshops demands a more effective sanitary inspection. This applies to the workshops of all branches, although there are a few exceptions where the accommodation is excellent. In the case of the polishers and finishers, special legislation is necessary, both with regard to the general conditions and the hours of labour. Further, the prevalence of the bad system of working in the home or in a little room in the house where the conditions are generally such as an employer dare not permit in his factory, makes it very essential that any new Factory Act should contain clauses making the giver-out of work responsible for the sanitary and other conditions under which it is performed.

The importation of gold and silver has been for a considerable time agitating the different organisations in the industry. Not that they are by any means in favour of so-called "Fair Trade" or "Protection," but because they desire "Free Trade" in the true sense of the phrase. Silver plate is at the present time imported and sent to the English assay offices and marked with the Leopard's Head of London, the Anchor of Birmingham or the Three Wheat Sheaves of Chester.[1] The only sign by which it can be distinguished from a piece of plate manufactured in either of these places is a letter F which is placed in the Hall-mark. Consequently, as Hall-marks all include a letter or cycle mark, the uninitiated public, and indeed many of the men employed in the decorative branches of the industry, are not aware that the letter F is other than either a tradesmen's or a cycle mark.[2] Hence

Formerly there were twelve assay offices in the United Kingdom, but those at York, Norwich, Bristol, Exeter, and Newcastle-on-Tyne have been closed. Those remaining are, London, Birmingham, Chester, Sheffield, Edinburgh, Glasgow and Dublin. Each one has its own distinctive Hall-mark.

[2] The "date-letter" or cycle mark consists of one of the letters of the alphabet. A different one is used each year until the whole of the letters of the alphabet (less two or three such as J, X and Y) are exhausted. The process is then begun again, but with the important distinction that the letters used are different in character every time. Thus the letter A has

the present Merchandise Marks Act is for these trades largely a failure. Articles are often sent from abroad in several pieces or by other means escape the mark. Moreover, if the English public is not cognisant of the meaning of the letter F it is hardly to be expected that our transatlantic cousins, or our French neighbours, should understand its importance. It is certain that they do not, for quantities of foreign-made articles are exported from England, after receiving our English Hall-mark, and sold as English manufacture. In order, therefore, that both the industry and the public should be protected from fraud, the various societies have unanimously arrived at the conclusion, that all imported gold and silver wares should be marked with a distinctive stamp, differing from the present ones used for home wares, such mark to be exactly similar to that used for Hall-marking imported watch cases, which consists of the word "Foreign." [1]

Finally there is the question of the shortening of the hours of labour, the eight hours' day being now the goal. The trade has slowly followed the general movement in the country in the matter of hours, nine per day now being the general rule. Many are strongly in favour of an eight hours' day, and convinced that it is sound and economical both in theory and practice. There are those, no doubt, in the industry who are at present opposed to a legal limitation. But in my opinion the reduction of the hours of labour to eight per day by legal enactment, acting directly or indirectly, is the only means of making it an effective and genuine benefit to the workers. And although the industry is not so forward in this question as many would wish, the belief in the

been the date letter of the London Hall-mark many times, but each time it is a different character, first being in, say, Old English, then Roman, then Italic, etc. These letters form the only means by which the date of the assay of an article can be definitely fixed.

[1] Yet another complaint is that some large firms of good repute do not scruple to bring up from Birmingham large quantities of common team-made goods and have them marked at the London Hall, afterwards selling them as London made. Some firms practise this to such an extent that they have actually no workshop in London, but merely an office to which these goods are consigned for marking.

need for legislation is steadily gaining ground, and it will soon stand among the items which the workers in the gold and silver industry will ask Parliament to assist them to realise. But although it may be necessary to obtain legislative action for these and other matters, it does not by any means follow that the societies can be dispensed with. These necessary reforms can only be obtained by the assistance of the Legislature. But it would be impossible to approach that body except by organisation, and the various trade societies centred in the Silver Trades Council perform this function to great advantage.

"The task which lies before the world is the re-organisation of industry on an ethical basis." What then shall take the place of the present condition of things? Co-operation in every field of industry. In place of our present bitterly competitive life, we shall live a more social one, recognising more fully our inter-dependence and approximating towards Collectivism. In the meantime, what can be done for these trades? The price of silver has been steadily decreasing until, roughly speaking, it is now half what it was forty years ago. Aluminium has been successfully introduced and rapidly fallen in price, and at the same time has received a great advance in public estimation. The reduced prices should commend the goods made in these metals to a larger circle of buyers, while advances in the systems of elementary and technical education, coupled with a cultivation of artistic taste, should induce buyers to demand artistic productions even though they were smaller in size, and perhaps a little more costly.

A feature which was so prominent in the Middle Ages, and in some few instances existent to this day, the encouragement of the craft by public and semi-public bodies in the making of large and small articles of plate, I hope will again be revived. Encouragement, also, from the different athletic and other clubs, by the demand for really artistic productions symbolic of their purpose, would do much to assist and raise the industry from its present position. Objects such as athletic and racing challenge cups, and articles of plate for use and decoration presented to persons and corporations, should be of such a character as to stand out as

monuments of artistic ability and skilful craftsmanship. Why should not our public bodies offer challenge prizes to be competed for by different teams, and not only for competition in physical prowess alone, but for intellectual ability to strive for? The prizes might be moved from town to town as they were won or lost. Why should not the town hall have its gallery for the reception and inspection of trophies won by the ability and energy of its townsfolk? Should public bodies be empowered to do this, another purpose could also be served, by instituting a competition for the design of the cup or of its model. Encouragement of this character would go a long way, would tend to arouse real enthusiasm, and to incite the craftsmen of the different towns to emulate the works as well as the deeds of the other townsmen.

It may be urged that with the movement towards Collectivism the craft of the gold and silversmith will tend to decay. But the incentives to artistic action just sketched would be part of the transition toward that period, increasing as the collective spirit increased. There is also another way whereby the industry could, and I am of opinion would be encouraged, and here we must remember what has already been pointed out in the earlier part of this paper, the fact that the precious metals were formerly largely used for architectural purposes. As the collective spirit grows so will the idea of national and municipal magnificence increase. The spirit which animated the Greek will find a home again. And it may be that future generations, instead of ministering to private vanity, will use their art and ability as true craftsmen, duly regarding utility while perfecting their art, in decorating and making beautiful the great public institutions which have already commenced to grow up around us.

SHIP-BUILDING.

By W. C. Steadman, L.C.C., L.T.C., Secretary of the London Bargebuilders' Trade Union.

SHIP-BUILDING in the United Kingdom is carried on principally on the Tyne, Tees, and Wear in England, on the Clyde in Scotland, and at Belfast in Ireland. There are, however, many other ports, such as Liverpool, Hull, and those on the Bristol Channel, where it is an imposing and valuable industry. The Thames cannot any longer be considered as a great ship-building centre, although, perhaps, in the old days of "wooden walls" it was the most important and busiest of all the rivers of the United Kingdom in this industry. This paper, however, will be confined mainly to the facts of the trade on the Thames, partly because the conditions existing there differ but slightly from those at other ship-building ports,[1] and partly because the writer's personal knowledge of the trade does not extend much beyond its character and methods as they are found on the Thames.

My father was a working shipwright, and, as a result, at the age of fourteen I was duly apprenticed to a shipwright and barge-builder. Since that time I have worked for twenty-six years as a journeyman on the river Thames, and my knowledge of the conditions of the trade has, therefore, been obtained at first hand and by actual contact with them. During that period many changes

[1] The chief difference between the industry as conducted on the Thames and elsewhere is that, as in so many other industries, there is a much more minute division and sub-division of trades in London than in the outports. Thus in London both the barge-builders and the boat-builders are recognised as separate trades, and possess their own Trade Unions, while in the north of England the shipwright usually does their work in addition to the building of ships.

have occurred in the status and the character of the industry, prominent amongst them being the rapid and enormous decline which it has suffered. Upon the reasons for this decline I hope to be able to offer some information.

There are now three kinds of ships built : (1) wood ; (2) iron ; and (3) composite, consisting partly of wood and partly of iron. The following figures show the proportion which these three classes of vessels form of the total number of ships built during the twenty-six years in which I have been engaged in the trade.

(A) LONDON ONLY.

Year.	Wood.	Composite.	Iron.	Total.	Tons.
1866	69	2	35	106	17,548
1867	34	2	23	59	5,446
1868	30	1	11	42	7,264
1869	19	1	15	35	4,174
1870	16	1	29	46	9,725
1871	4	–	14	18	6,438
1890	14	–	22	36	3,431
1891	—	–	16	16	1,345
1892	—	–	8	8	507

(B) UNITED KINGDOM.[1]

Year.	Total.	Tons.
1866	1,323	341,189
1867	1,159	269,080
1868	1,019	316,197
1869	971	354,287
1870	974	342,706
1890	494	596,544
1891	535	639,380
1892	548	665,230

[1] The details as to the number of ships of each class built do not appear to be obtainable for the United Kingdom.

A comparison of the total number of ships built in the United Kingdom in 1866 and in 1892, and the total tonnage in each of those years, reveals the tremendous change which has taken place in the average dimensions of vessels. Thus while in 1866 the number of 1,323 vessels which were built gave a total of only 341,189 tons, or an average of 258 tons each, in 1892 a total of only 548 ships gave a total of 665,230 tons, or an average of 1,214 tons each. The methods of measurement and calculation of the tons burthen have remained the same, and the average size of ships built now is, therefore, about five times greater than the average size of ships built in 1866.

A further comparison strikingly shows the great decline in the proportion and in actual amount of the ships built on the Thames, for, while in 1866 the tonnage of London-built vessels was 5·14 per cent. of the whole, in 1892 the percentage had fallen to ·07. In other words, in 1892 London shipbuilding yards did not produce ships of tons burthen equal to one-thirty-fifth part of what they did in 1866, whilst in the same period the total tonnage of the vessels built in the United Kingdom nearly doubled. This decline of the shipbuilding industry in London began first to be felt in the year 1868. In the winter of 1868-9, the depression was very marked and serious. Around the Isle of Dogs a perfect net-work of shipbuilding yards existed in those days, and, as the condition of trade compelled a discharge of the men, the distress became appalling. There was more poverty, and misery, and suffering in the East End of London in that winter than I have ever seen since. People died of starvation almost daily, and the distress was so keen and so prolonged that a relief fund was started and the Queen was appealed to for assistance, which, however, she declined to render.

The rate of wages in 1860 for a shipwright was 6s. per day. In 1864-5 an advance of 6d. per day was obtained, making the rate 6s. 6d. In 1868 a further increase of 6d. per day was demanded by the men. Many of the large shipbuilding firms objected strongly to the men's demand for an increase, and urged that, in face of the severe competition of the Tyne and Clyde,

they would be compelled to close their yards altogether and to cease building. But the London shipwrights, who were very powerfully organised, insisted upon the advance, and it was eventually conceded to them. In spite of the severe depression which has, since 1867-8, prevailed in their trade, they have maintained intact, since that year, their standard rate of 7s. per day. Meanwhile, although it is true that the men on the Tyne and Clyde were not at that time receiving so high a rate of pay as those in London, this has ceased to be the case. The shipwrights in Scotland and the north of England are now quite as well organised as their southern comrades, and they have increased their rate of wages and diminished their hours of work until the conditions in the trade in these two respects are now practically identical throughout all the chief ports of the United Kingdom. Where the men are working day-work, they are all now paid at the rate of 7s. per day of nine hours. At some of the ports, however, including London, there exists a system of piecework, but the differences in the piece-rates of pay for the same class and kinds of work are so small as to be of little importance. It may, therefore, be reasonably suggested that whatever may have been the cause originally of the extent of the industry being confined to such narrow limits on the Thames, it cannot be urged with any shadow of reason that it is kept away from London now by any such slight differences, as may exist in the labour cost of production. The fact and explanation seems to be that, from the moment that the change from wooden to iron ships was made, the trade in the port of London was, from natural causes, doomed to decay. The shipbuilder in the north of England possesses an enormous and almost insurmountable advantage over his rival in the south, by having the raw materials for the construction of iron vessels actually on the spot. The extent of this advantage can be illustrated by one example. In some of the great yards on the Tyne, such as that of Messrs. Palmer at Jarrow, the iron ore is obtained from the earth at one end of the works, while at the other end it is turned out in the shape of highly finished, finely constructed, and completely built ships. It is this natural advan-

tage of situation and proximity, and not any minute and well-nigh incalculable differences in the cost of labour, which has prevented, and which probably will prevent, any large development of the iron shipbuilding industry on the Thames. This it is which really has occurred. It is a mistake to suppose that the industry has left the Thames, for this, indeed, is impossible, as it never had a firm foot-hold there. Wooden shipbuilding we did have, but that has declined not only on the Thames but everywhere else as well. The relative commercial advantages of iron vessels were not to be suppressed by any sentimental desire to maintain the wooden shipbuilding industry in its earlier greatness. In the northern ports, the building of iron ships has replaced the lost older trade, but in London this has not occurred, for we are not as advantageously placed for the conduct of the new industry.

One of the things which has contributed to this result, or which has, at least, unfairly handicapped the competition of London, has been the excessive rates charged by the railway companies. The companies are, no doubt, not entirely to blame for this, for, as we know, whenever a company has commenced to acquire land upon which to construct its line, the landowners have immediately hastened to place exorbitant and preposterous prices upon it. Through their powerful influence in Parliament, they have usually succeeded in obtaining the full satisfaction of their demands, and the expenses of constructing the railway have thus been unreasonably increased. This is shown most clearly by the relative cost per mile of home railways and of those built in other countries. Thus, while a line can be constructed in America at a cost of £13,000 per mile, in Russia £15,000, in Germany £21,000, and in France £28,000, in England the cost averages no less a sum than £42,000 per mile. There seems to be no real reason why with skilled and careful management on the part of the shipbuilders on the one hand, and a considerable reduction in the present unfairly excessive railway rates on the other, the industry should not find a stronghold and flourish on the Thames.

During the last twenty-five years the Docks of London have

been vastly enlarged and improved. The Tilbury, Milwall, and Albert Docks have been constructed, and the East India and South Docks have been considerably enlarged, to say nothing of many minor and yet useful improvements. All this points to a largely increased shipping tonnage annually entering and leaving our port. This should, at any rate, make it the foremost of all repairing ports even if the hope that it may still be a building port again should prove to be but a delusive dream.[1]

England being an island, we are of necessity dependent to a great extent upon our navy for protection against invasion from other nations. With this object we maintain a navy which costs us some 14¼ millions of pounds per annum. At more or less frequent intervals, the time being generally happily chosen when public attention is not held by a murder or a strike, a scare is raised over the alleged inferiority of our navy to that of some of our neighbours. The scare-mongers, whose intellectual outlook is severely restricted by their desire to secure an abnormal supremacy for England as a maritime power, generally contrast our naval armaments with those of France, and complain that both in size and efficiency we are wanting very much. To a workman their arguments appear singularly inconclusive and futile, for everyone

[1] In this connection it is interesting to observe that employers are equally agreed with workmen as to the need for, and possibility of reviving the ship-building industry in London. In a letter to the *Daily Chronicle* of June 28th, 1894, Mr. A. F. Heils, the chairman and managing director of the "Thames Ironworks and Shipbuilding Company," criticises severely the policy of the Admiralty in always building its ironclads in its own overcrowded dockyards, or giving its contracts to firms in the North of England. He asserts that in spite of wages being somewhat higher, and the cost of materials greater in London than in the outports, nevertheless the first tenders sent in by his firm for the construction of the two first-class cruisers *Powerful* and *Terrible* were only £5,000 in excess of those of the successful competitors in the Clyde, upon a total of about £550,000. And he further definitely offers to build a new battleship, a year quicker, 20 per cent. cheaper and 5 per cent. better than it can be built, with existing arrangements, in the Government Dockyard at Chat am. Thus the wish that London may yet become a building port again does not appear to be without some hope of fulfilment in the near future.

knows that during the last four years, while France has expended in building and equipping ships of war the sum of £10,914,000, England has spent on the same objects no less a sum than £19,873,000. No one, much less these extreme patriots, would suggest that France has obtained for her smaller expenditure a larger and better production than England.

An analysis of the labour cost of building vessels of war in England and France discloses once more the fallacy of the argument that low wages are profitable, and provides additional proof of the dearness of cheap labour. For while the English workmen receive much higher rates of pay, and are engaged for fewer hours than their fellow-tradesmen in France, the expenses of construction are considerably higher in the latter country. The cost of building a Government "ram" in England is £774,000, whilst to build a vessel similar in material, workmanship, and efficiency in France would entail an expenditure of £954,000, or over 23 per cent. extra. In every other respect except that of cost the vessels may be equal, but it seems proved that the comparative habitual under-payment of the French workman has checked any great increase of his craftsmanship, and has resulted in his labour being relatively more expensive. Once again it is demonstrated that impairment of efficiency is the only result that can be expected from systematic underpayment of workmen.

In former times the system of apprenticeship was very rigidly enforced in the shipwrights' trade. Every man was then a thorough and practical workman at his trade, and could build a ship from keel to topmast. The growing elaboration of the work, and the growth of what is really a new industry by the substitution of iron for wooden ships, has led to a complete and minute system of subdivision of labour. As a result, instead of one man knowing, and being able to do practically any part of the work in the construction of a vessel, the trade is divided to-day into numerous and detailed classes, each one distinct and separate from the others. Thus merely in the building of the hull of an iron ship, the work which in earlier times, and in wooden ships, would have been done throughout by one man, the shipwright, is now divided amongst

the men in several branches, such as the platers, riveters, holders-up, putters-in, and drillers. What may have originally been branches of one trade, have now become distinct trades in themselves. It is true that questions of over-lapping and demarcation of work have led to many internecine conflicts, but there is a broad and accepted division such as that above indicated. The change in the materials for, and in the character of the vessels, may have been accountable in itself for the sub-division, but the contrast between men, whose work in many cases is largely a matter of physical strength, and men who understood the whole of their trade, acquiring their knowledge by a lengthy and laborious training, and could successfully pursue any part of it, is extremely striking, and is evidence of the decay of apprenticeship in the ship-building industry.

In the construction of a ship, the order and method observed is briefly as follows. First of all the keel is laid. The stem and stern are next attached, and "she" (*i.e.* the skeleton of the vessel) is then inserted into a frame of wood or iron as the case may be. "She" is then "skinned up," as it is technically and expressively phrased, with either planks of wood or iron plates, according to whether the vessel is to be an iron or wooden one. When that is finished, the whole hull of the ship is practically complete, and the only work that remains, important as it is, is to construct the subsidiary portions and the elaborate and intricate departments of the vessel.

In the construction of an iron ship, the shipwright, firstly, makes a "templet," that is, a model in wood of the size and shape that is required for the iron plates which are affixed as a covering for the vessel. Then the "plater" makes the iron plates to the model of the "templet." The next process is for the "driller" to bore holes in the plate and also corresponding holes in the rib of the vessel to which it is to be fixed. The plate is then placed on the side of the vessel, the "putter-in" puts the red-hot rivet into the holes already drilled, and the "holder-up" holds a heavy and ponderous hammer against one side of the rivet, while the "riveter" rivets or clinches the other side. By this means

heads are formed on either side of the rivet, which holds the plates firmly together.

In making a wooden ship the process is a much simpler one. The shipwright makes patterns as before, but he cuts the wood himself to the required shape, and fits the shapes into position, leaving only the subsidiary and less responsible tasks of caulking, etc., to be accomplished by other workmen.

Both in the shipwrights' and the barge-building trades the old system of legal apprenticeship is still maintained. In the barge-building trade there is so far no sub-division of labour at all. Any journeyman, who is a good mechanic, is perfectly competent to build a barge entirely by himself, with no assistance except that of a few labourers to aid in lifting and carrying the timber. But barges, like ships, are rapidly increasing in size and tonnage. Thus, when I was apprenticed to the trade, a barge was considered to be of good size if it carried 70 tons, but to-day they are built to carry 100 or 200, and in some cases 250 tons. This change has been brought about by the acute competition among the lightermen, and by the more general employment of steam-tugs for towing purposes, which renders it possible to easily navigate barges of so large a size.

The number of shipwrights now employed on the River Thames is about 1500. They are organised into two Trade Unions, and every man is a member of one or other of these bodies. The societies are—(1) The Shipwrights' Provident Union of the Port of London, established 1824, and with about 1400 members now;[1] and (2) the London branch of the Associated Society of Shipwrights. This latter society is a National Amalgamated Union, with headquarters at Newcastle, and has some 100 members in

[1] This society had been in existence as a friendly club, and as "the Committee for conducting the business in the North" for many years previous to 1824. As a trade society it was, of course, entirely illegal, but upon the repeal of the Anti-Combination Laws in 1824, it was at once reconstituted as the Shipwrights' Provident Union of the Port of London, and in that form, with the exception of some minor alterations, has continued uninterruptedly in existence until this day.

the London district. There is also the smaller, but equally well-organised Barge-Builders' Trade Society, which was established in 1872, and comprises within its ranks over 400 members out of a total of 500 men employed at the trade in London. It has very strictly maintained for its members a uniform wage of 9d. per hour, and a uniform working week of 54 hours. There are, in addition, in the ship-building industry, the iron ship-builders who are mostly members of the United Society of Boilermakers and Iron Ship-Builders. This is a very powerful national organisation, centred in Newcastle. The London branches, fourteen in number, are strongly and well organised, and contain about 2,250 members engaged in the shops of the repairing yards on the river. Finally there are also several unions of subsidiary workers. Prominent among these are the two London societies of drillers, with about 1,000 members between them. There are also the two London societies of sailmakers, one of which dates back to about 1750, and has preserved cash and minute books from early in this century. Amongst their curiosities is an old banner, which was carried in the procession at the demonstration in 1820, in favour of Queen Caroline when her husband, George IV., was endeavouring to obtain a divorce from her. This trade is now a small and decaying one, and although every man employed in the port is a trade unionist, the two societies do not possess more than 300 members between them. There are also small societies of caulkers, spar and block-makers, boat-builders, and of ship-fitters, all embracing groups of other minor and subsidiary workmen engaged in the industry.

The industry has, however, undergone so remarkable a revolution that the men employed in the construction of the frame of a vessel have to be supplemented by many others devoted to the work of furnishing and ornamenting. The ships turned out of our great yards to-day are practically gigantic floating palaces. In their production are employed an immense army of additional workmen, such as painters, cabinetmakers, carpenters, fitters of electric light, etc., and all the other numerous crafts whose work is so necessary for securing convenience, or strength, or beauty, in

the interior of a vessel. Notwithstanding an increasingly severe competition of other nations, we are still able to hold our own in this industry, and to produce the finest ships in the world. There need be but little fear that with a steady maintenance of—perhaps an addition to—that high standard of comfort which our ship-building workmen have achieved and enjoy, and with a growing recognition of the need for technical education, and for better general training for the youths of the trade, and with a more watchful attention of the trade, and more sympathetic treatment of the men by the masters, England will long continue to far eclipse the remaining nations of the world in the beauty, the strength, and the utility of the ships which she produces.

WOOD ENGRAVING.

By Henry Crossfield.

THE interest which attaches to the art of engraving on wood is by no means confined merely to its æsthetic significance. It has been, in many ways, identified with the development of the art of printing; and its connection with this important industry would alone justify its inclusion in this series of essays.

Engraving, in its general sense, is incising, either by cutting with a tool, or by corrosion with acids, upon any suitable substance. The word can be traced back to the Greek root "Grapho" —"I cut." Limiting the meaning to its pictorial use, it is a method of obtaining a certain artistic result by the employment of lines; and the distinguishing feature of wood engraving is its adaptability to the purpose of the ordinary printing press. In this respect, as also in the means by which the result is obtained, it is the very antithesis of its sister art of engraving on steel and copper plates. Every line of the proof of a copperplate has been cut *into* the surface of the plate, or, to use the technical phrase, "in intaglio"; while the impression is taken in a special press, the ink being rubbed into the lines, the surface cleaned, and the paper then forced into the lines by great pressure. In wood engraving, on the other hand, every line intended to be printed is left standing in relief, the remaining portion of the surface being cut away, and the print is taken by pressure on the surface of the block, as it is called, just as in printing from ordinary type.

Lines cut *into* the wood are sometimes used in modern work, but they are then intended to print white against a black background. But in copper every line cut into the plate is intended

to print black, or the colour of the ink employed. The principal tool in both cases is a lozenge-shaped instrument known as a "graver," of which all the other tools used are merely modifications. The graver is pushed or ploughed through the substance in a manner directly opposite to that in which we use a pencil or brush. Modern wood engraving is executed on box-wood, cut transversely, *i.e.* across the grain, and the careful preparation of this wood forms quite a special industry in itself. An interesting fact, connected with the manufacture of large blocks for engraving purposes, is the method of building them up by means of numerous small pieces bolted together in such a way as to be easily taken apart. This enables work which is urgently required to be performed very rapidly. The large block is taken to pieces and distributed to several different workmen, a number of whom are thus employed upon the same subject. Although this method arises partly from necessity, as it is unusual to find a piece of wood of large size sufficiently free from flaws to be of service in its entirety, it is a matter of considerable importance to the illustrated papers, the work for which is necessarily required in great haste.

The art of engraving, in its widest meaning, dates back to very remote antiquity. The earliest artistic efforts of which we know are the rude images of animals, scratched or cut on pieces of tusk or stone, by primeval artists contemporary with the mammoth. When we consider also the inscriptions cut on the monuments which characterise the early civilisations of Egypt, Assyria, and Mexico, its use in ornamenting various kinds of metal-work during the same early periods, and in decorating the weapons of the most barbaric communities, both in the past and in the present, we recognise the art of engraving as one of the oldest and most widely exercised crafts in the world. And where, in these instances, modelled forms are added, we see engraving passing into sculpture, the latter word, indeed, in its origin, signifying both arts.

The earliest application of engraving to the purpose of impressions appears to have been in stamping. A man's seal was

of great importance, in a time before the use of money, as giving validity to any business transactions. In this service engraved gems, and the little cylinders from Babylon to be seen in the British Museum, were first employed. Here also we light on an early example of engraving on wood. From an Egyptian tomb a wooden stamp has been recovered, in size about five inches by two, bearing a hieroglyph inscription, cut "in intaglio," signifying, "Amonoph" or "Beloved of Truth." Bricks also have been found bearing similar inscriptions, evidently impressed by a stamp of this kind, and these are attributed to a period contemporary with the "Exodus." From Assyria, too, we have clay bricks impressed with cuneiform inscriptions from a stamp of which the letters or signs have been engraved in relief, and which is considered by experts to have been most probably of wood. Thus, with the earliest examples of wood engraving we arrive at the genesis of printing, which, as practised to-day, is simply an extension and development, in the form of a wide multiplication of the basic principle, of taking an impression from a stamp.

This particular application of engraving becomes extensively exercised throughout the subsequent development of civilisation. The art of stamping letters and figures on coins reached a degree of perfection during the best period of Greek art which has never been surpassed. It seems probable that the Romans possessed some kind of ink which they used in a similar direction, while the practice of attesting documents with inked stamps, often in the form of monograms, appears to have been in vogue during the Middle Ages. Towards the end of the twelfth century, engraved blocks, either of wood or metal, were used for giving off impressions in colour to the surfaces of fabrics such as silk, an art supposed by some authorities to have come from Saracenic Sicily. There is also some evidence that the idea of copperplate printing was suggested by what is known as "Niello" in goldsmiths' work. This consists in filling in an engraved design with a kind of black enamel in order to heighten its effect. The enamel being of a hard nature, was very difficult to remove when once inserted, and so, before bringing their work to its final stage, the goldsmith

obtained an impression on damp cloth or paper with suitable ink, to see how the design was progressing. The possibilities of further applications of such a practice, when it was once established, must have been obvious.

When, where, and under what circumstances the value of engraving on wood for pictorial purposes was first conceived is a matter involved in much obscurity. Dismissing the theory that it was brought to Europe from the East by Venetian merchants or travellers, as being discountenanced by the known practice of relief engraving long before the period assigned for its introduction by this means, we find it employed early in the fifteenth century for producing figures of saints. These were distributed by the clergy to the people for their religious edification much as tracts are in the present day. They first made their appearance in Southern Germany, and are known as "Helgen," or saint pictures. One of the earliest engravings which have been discovered, being dated 1423, belongs to this order. It was found at a convent in the neighbourhood of Augsburg, and represents St. Christopher with the infant Jesus crossing a stream. It is a simple outline design, by no means lacking in vigour, though of course conceived in the conventional style of early art, and was apparently intended to be coloured. About the same time, too, engraving on wood begins to be used for producing the outlines of figures on playing cards, which were afterwards coloured either by hand or with a stencil. Cards came into general use in Europe towards the close of the fourteenth century, the Germans being the first to make their manufacture a distinct trade; and it is in the Burgess Roll of the City of Augsburg, in 1418, that the name of *Karten-macher*, or card-maker, first appears.

In the absence of exact knowledge it is feasible to conclude that the first engraver was his own designer, and in the light of its early adaptation to religious purposes, we may perhaps connect him with the line of old monkish illuminators. This early work consisted in simply clearing away with a knife the wood surrounding the artist's outlines, and in its first rude beginnings would not call for exceptional skill. As its method became known, and it was made

to serve several suitable purposes, there gradually arose a distinct class of workmen following this particular avocation. Of such a class we have certain mention at Nuremberg in Germany in 1449, under the distinguishing name of *Form-Schneider*, or figure-cutters. The wood employed was of a kind, not too hard, and suitable for drawing on, such as pear or apple wood, and it was cut plank-wise.

The next marked development is in connection with the production of "block-books," *i.e.* books printed from pages of text, engraved on blocks of wood, which form the link between the older manuscript books and those produced from movable types. Their origin is attributed to the Netherlands, and several of the more famous of those which have survived consist of wood-cut illustrations of a devotional character with the addition of explanatory text. They are printed in a light-brownish ink, of the nature of water-colour, and the impressions were evidently taken in some cases by friction, possibly with a roller. They are undoubtedly antecedent to the art of printing from movable types cast in metal and used in a press, as introduced by Gutenberg and his associates in the middle of the fifteenth century; and they are of interest as an illustration of the close connection between wood engraving and the development of printing, before mentioned. The designs in the best of these "block-books" are a great advance on anything in the same way before accomplished. There is an attempt at shading in the folds of drapery on figures, by introducing short parallel lines. Subsidiary objects are introduced in the backgrounds, and the work bears evidence of a higher degree of taste and feeling in the execution of the design than is to be found in the earlier saint pictures.

The multiplication of books through the introduction of the printing press created a considerable demand for wood-cuts. At first the work so used was inferior to the standard obtained by the best of the "block-books." It must be remembered that the production of these books formed a very large part of the engravers' work, and continued to do so for many years after the invention of typography. The engravers were now formed into

corporations or Gilds, and, it is probable, were jealous of the new art of typography, and refused to do work for the printers. In this case the printer would be reduced to employing a sort of "job" hand, who was probably also an "illegal man." [1] There is in this connection a curious dispute recorded at Augsburg in 1471 between the printer, Gunter Zainer, and the engravers, concerning the printing of illustrations in his books. It was eventually compromised, through the intervention of a friendly abbot, by an agreement that Zainer should be allowed to print such illustrations, provided that the engravers executed the work.

But towards the close of the fifteenth century, and during the first half of the sixteenth, wood engraving of this earlier school reached its highest degree of perfection, and became employed throughout the whole of Europe as an illustrative medium to a greater extent than even in the present day. It was in Germany, however, that the greatest development was seen in both these respects. Distinguished artists began to turn their attention to providing designs for the engravers; and we find the principle of "cross-hatching," as it is technically termed, introduced. This consists in crossing lines one over the other at various angles, in order to obtain a greater variety of form and colour; for the greater the number of lines in a cut, and the closer and more varied in thickness they are, the greater will be the contrast of light and shade. This light and shade, or "texture," is entirely absent from all the work executed prior to the adoption of this method, and its introduction led to the attainment of a much more complete and artistic result. It was probably suggested by its use in copperplate engraving, which was then coming into vogue, many of the artists being copperplate engravers also. In England, however, the art does not appear to have advanced beyond a very rudimentary stage until a much later period. The first book printed here from movable types with wood-cut illustrations was Caxton's second edition of his "Game and Playe of the Chesse," published in 1480.

[1] *I.e.*, a man who worked at the trade without having fulfilled the requirements as to apprenticeship, etc., of the Gild.

In addition to its establishment in this way as a valuable accessory to printed books, wood engraving received in Germany the direct patronage of the Emperor Maximilian I.[1] He commissioned several important works, dealing for the most part with the events of his reign. One of these, known as the "Triumphs of Maximilian," extended to nearly two hundred feet in length, and is probably the largest wood engraving, or more correctly, connected series of engravings, ever produced. The designs for some of these were in part contributed by the Emperor's friend and contemporary, Albert Durer. This great artist, in addition to his labours as a painter and copperplate engraver, has his initials attached to some 200 drawings engraved on wood. The theory which attributes these works to his own engraving, is, however, entirely erroneous. A great promoter of the craft he undoubtedly was, and under the stimulus of such a master we see the engraver himself, mechanical in some respects though his work might be, developing the feeling and spirit of an artist. These form, on the whole, the finest series of drawings prepared for the particular purpose up to this time. The backgrounds are well filled with appropriate details of landscape, architecture or figures, the latter being well drawn and skilfully grouped. The composition is vigorous and animated, the light and shade carefully executed, and the whole gives a complete and natural effect never previously attained, while the reproductions are, in many instances, well worthy of the original. Although these creations are mainly of a religious character, yet in giving his subjects a national setting, they stand in many respects for representative pictures of his time.

But the high water mark of the engraving of this epoch is reached in a remarkable series of small designs attributed to Holbein, illustrating the "Dance of Death," *i.e.* Death seizing suddenly and impartially on persons of all ranks and conditions. These were first published at Lyons in 1538. Death is represented in them, with most vivid power, as a grim sardonic humorist who rather enjoys his tragic jest with poor humanity

[1] Maximilian I., Holy Roman Emperor, 1459-1519

But the exquisite delicacy with which the artist's intention has been rendered exhibits a degree of excellence and of artistic feeling, which places this series among the most perfect examples of line or fac-simile engraving ever produced in the whole history of the art.

Towards the close of the sixteenth century there began a decline in the use of wood-cut illustrations, which, beginning in Germany, spread gradually, though more slowly, throughout Europe. Between 1590 and 1610, however, there was a slight improvement in its practice in England. But the old race of designers was dying out, and no new school had arisen to fill its place. Hence the decay of the art which depends so largely for its success upon the quality of the designs with which it deals. Its place began to be taken by steel and copper work, which had, from the first, been chiefly pursued by artists who supplied their own designs; and though wood engraving continued to be practised to some extent, it passed for all higher purposes into complete neglect by the middle of the eighteenth century.

The character of this early work is very clearly set forth in an interesting book published at Nuremberg in 1564, giving illustrations of almost every branch of employment then known in Germany, with rhymed descriptions by the celebrated Hans Sachs. It contains a picture of an engraver at work, with the following verse:—

> "I am a wood engraver good,
> And all designs on blocks of wood
> I with my graver cut so neat,
> That when they're printed on a sheet
> Of paper white, you plainly view
> The very forms the artist drew.
> His drawing, whether coarse or fine,
> Is truly copied line for line."

As previously explained, all these designs were line drawings such as we to-day term "pen and ink" drawings. The engraver's work was simply to cut away the white spaces between the lines, and to gouge away the larger spaces to a depth sufficient to escape the ink. Although the above verse mentions the "graver," there is no reliable evidence that the tool now known by that name—

which is properly the copper engraver's tool—was actually in use until a later period. The word is merely employed in its technical sense, as the picture mentioned most undoubtedly shows. The principal tool used was, as before mentioned, a kind of knife, and the labour involved in rendering the elaborate "cross-hatching" of the more advanced work must have been very great, amounting to at least double what would be required with a modern "graver." Fac-simile engraving, as it is called, has persisted down to the present day, and very fine examples of it may be seen in Sir John Tenniel's cartoons in *Punch*.

Thus far then had the art advanced, when towards the end of the eighteenth century it entered upon another and entirely new path, under the stimulus given by the influence of the great Thomas Bewick. Bewick was born at Cherryburn, Northumberland, in 1753. He was apprenticed to a general metal engraver, who, among his other work, had occasionally wood blocks to cut, and these he was in the habit of turning over to his apprentices to execute. Bewick was thus enabled to obtain some insight into the possibilities of the craft, which was further aided by his intimate knowledge of the methods of steel and copper work. On completing his apprenticeship, he increased this knowledge by working for a year or two at wood engraving in London. Returning to Newcastle, he entered into partnership with his former employer, and in conjunction with him produced the celebrated books by which he is best known.[1] The illustrations to these were mostly his own drawings, though he was assisted towards the end by several able pupils.

Special interest lies in his treatment of the engraving. As a metal worker, Bewick was familiar with the "graver," and, using it in connection with box-wood, cutting across the grain—the only way in which it can be used—he attained effects which, it is true, had been attempted before, but only in a very tentative way. In this he was assisted by being his own artist, which naturally led him to the most direct method of reproducing his ideas. Recog-

[1] "The History of Quadrupeds," published 1790; and the "History of British Birds," published, vol. i., in 1797.

nising that the deepest colour to be obtained in wood engraving is the plain surface of the block, *i.e.* solid black, he reversed the procedure of the older school by working from black to white.[1] This method, known as the white line to distinguish it from the old fac-simile work, consists really in drawing with the "graver," the engraver supplying his own lines. It enables drawings, of a character resembling painting in washes of colour, to be reproduced on the wood. It is on this principle that all modern colour engraving is founded, and by it may be said to have been raised into a distinct art, as contrasted with the more mechanical method of the earlier period.

Although Bewick, in these respects, can hardly be credited with entire originality, yet his adaptations exhibit genius of a high order. He was the first to apply wood engraving with success to the delineation of animals and the natural representation of landscapes and woodland scenery, a class of subjects for which it is especially adapted, and which had previously received only very formal and conventional treatment. He was a man of marked personality, and, in the heading and tail pieces to his books, appears in the character of a humorist and moralist. If the older system of wood engraving was, as it seems to have been, originally a German art, we may fairly claim that modern engraving is, through Bewick, an English production.

The publication of these and other books once more drew attention to the value and resources of wood engraving, particularly in its later and improved form. The interest thus aroused was well sustained by the labours, both as artists and engravers, of several of Bewick's pupils, who in some respects even advanced the high standard set by their master. It gradually regained its place as the leading medium for book illustration; the best artists again bestowed their attention upon it; and, with the growth of the illustrated press during the latter half of this century, it has reached the distinguished position it now occupies.

[1] By means of lines and dots cut into the wood and printing white. Proceeding thus, by graduation the black and white lines balance each other and merge ultimately into pure white.

t must be noted that much of the engraving of the first
ırs of this century was cultivated as a distinct art in
› aim of the engraver being to attain a certain technical
: line in which the drawing becomes subordinate to his
ntion. This period represents—in the opinion of the
›ractitioner, W. J. Linton,[1]—the highest degree of excel-
› art has ever attained. But with the introduction of
phy and its application to the purposes of engraving in
preserve the original drawing, which is destroyed when
. the block, together with changes in our artistic methods
, aimed at a closer and more realistic treatment of
he most modern work, while retaining all the essential
istics previously described, has once more become sub-
to the interpretation of the feeling and spirit of the
'his is well expressed in the many admirable series of
t Masters, appearing from time to time in the fine art
s and journals. Here, for the most part, the engraver's
study has been to translate into his own medium the
:ained by the painter with his combinations of colour.
is in no way incompatible with the attainment of both
beauty and truth, though the latter is, if anything, the
›ortant. And when we consider what this involves, the
s which present themselves in translating, say, the buff
›oots, scarlet silken doublet, and dark velvet cloak of an
cavalier, with their varying textures, into one medium
›nly from black to white, we must confess that, in so far
ins success, engraving of this order is entitled to a high
:he graphic arts.

ne of development has followed in remarkable proximity
›f the sister art, engraving on copper or steel. First
›ut as a simple shaded outline, then producing a technical
' its own and becoming valued as a new form of art, and
:king mainly effect and softness, reaching a closer fidelity
› where we find only form and colour. And now, in the

[1] "The Masters of Wood Engraving": by W. J. Linton. [Issued
›ers only. 500 copies printed.] New Haven, Connecticut, 1889.

same way, both arts find themselves confronted by mechanical processes, which seek to achieve a similar result at a lower cost by the use of photography and corrosion with acids, without the intervention of the graver.

Since the introduction of steam printing, it is rare that an impression is taken from the wood block itself. The wear and tear involved in this method is far too severe for the delicate surface. To overcome this difficulty a cast is employed. This is obtained by first taking an impression of the block in wax in a hydraulic press. The wax mould is then placed in a bath of sulphate of copper in solution. This is deposited on the mould by electricity, forming a thin copper shell. The shell, being stripped from the wax mould, and the back filled in with metal, gives an exact facsimile of the original block. The printing is by no means an unimportant stage in the elaborate series of processes through which an illustration passes before reaching the public. By the system of distributing the pressure, called "overlaying,"[1] it is possible to obtain from the steam press a result almost equal in delicacy to a hand-taken proof. Much of the beauty of the illustrations in the art magazines and journals is due to the exquisite taste and skill displayed in the printing; while on the other hand, some good work may be spoiled through lack of this skill.

In a trade demanding such varied gifts and experience as engraving, the remuneration is necessarily governed, to a considerable extent, by the ability of the individual craftsman. It is, in many respects, the misfortune of this art that its production has been largely dominated by the commercial needs to which, on the other hand, it is principally indebted for its existence. In the early days of its renascence during this century, the leading engravers of the time held distinguished positions in the art world, and, in consequence, exercised a certain amount of control over the reward due to their labour. With the growth of the demand, however, the art tended to pass into the hands of large employers,

[1] This consists in arranging pieces of paper between the block and the press in such a way that the pressure is increased in the dark and modulated in the light spots.

who combined business ability with artistic competence—virtues not always found in unison. Still more recently, however, a slight reaction has commenced in favour of the individual worker, and this appears likely to increase as the pressure of competition with other reproductive methods places the art still more in the position of a luxury rather than that of a necessity.

With regard to these other methods, it may be briefly stated that although they have undeniably reduced the demand for engraving, they have also, in many directions, created a market for themselves. Many of the cheap periodicals, which, whether for good or otherwise, flood the bookstalls, could not have been produced save for the introduction of these mechanical processes. In the same way, the growing practice of illustrating almost everything, even the daily newspapers, is due to this cause. It must also be acknowledged that the prices paid for engraving have been similarly affected by the same cause, though this does not appear to have materially influenced the average remuneration of the craftsman. That, at best a modest one, has remained nearly the same for the last thirty years. The pace at which he works has been somewhat forced, and on the whole he does more work now than he did formerly for the same pay, but it is probable that his employers' profits have also been reduced. In this connection, it is only fair to add that on the whole the publishers of Europe and America have shown a disposition to minimise the effects of competition, and to deal generously with the highest order of work.

The English engravers have recently organised themselves into a society, and with a laudable desire to emphasise the cosmopolitan character of the art, have entitled it "The International Society of Wood Engravers."[1] The society is established, to quote from the preamble to the rules, "for mutual assistance and support, to protect, advance, and uphold such customs, usages, etc., as may be deemed necessary, or as special requirements may demand; to advance the art of wood engraving by holding ex-

[1] This is not strictly a Trade Union, and has, indeed, been registered as a Fine Art Society. It has already nearly two hundred members, and is in a sound financial condition.

hibitions, awarding prizes, etc." It has already received the support of many connected with the illustrated press, and of several of our most distinguished "black and white" artists, and gives promise of a vigorous and useful life. A similar society exists in Paris, while in Germany the engravers form an influential corporation with about a thousand members, and possess a quarterly organ dealing with the interests of their profession. This German organisation partakes more of the nature of a Trade Union than do the others, and seeks to control such matters as the admission of apprentices. It possesses also a sick and out-of-work fund. Such societies, working in harmony with the artist, should exercise considerable influence in the direction of elevating engraving on wood to that position among the fine arts to which its merits, and the degree of perfection to which it has been brought, justly entitle it. Even in this latter respect, its capacity for further development is by no means exhausted. The proposal, made by one of the ablest living practitioners of the art, to issue a limited number of signed proofs of the works of one of our leading painters, engraved in the highest style, after the fashion in which steel plates are issued must, if carried successfully into effect, influence the art for good, and tend to raise it above the mere commercial principles which have hitherto so largely dominated it. On the other hand, the steady diffusion among the masses of a better knowledge of the principles and practice of art, by means of art and technical classes, must tend to raise the standard of even the commoner kinds of work.

Taking these things into consideration, and viewing them in the light of its long and chequered career, one may conclude that this historic craft, with its many interesting associations, will continue to remain with us. To this, more than to any other method of reproduction, we owe that the scenery, events, and art treasures of the world have been brought within the reach of all, and notwithstanding the dangers which it shares, in common with other industrial pursuits, from the constant changes in tastes and processes in the progress of civilisation, we may hope that the sun of its prosperity is not yet set.

CORN-MILLING, ANCIENT AND MODERN.

By W. Salmon, President of the London District of the Millers' National Union.

CORN-MILLING is one of the most ancient of all industries, dating practically from time immemorial. Nor has it undergone, at any rate until very recent years, any important alterations in method, and the essential principle of the oldest hand-mill is retained in the stone mills of to-day, in spite of the numerous improvements in machinery of every description. Thus we read in Wilkinson's "Manners and Customs of the Ancient Egyptians," that "their corn-mills were of simple and rude construction. They consisted of two circular stones nearly flat, the lower one fixed, while the other turned on a pivot or shaft rising from the centre of that beneath it; and the grain descending through an aperture in the upper stone immediately above the pivot, gradually underwent the process of grinding as it passed. It was turned by a woman seated and holding a handle fixed perpendicularly near the edge. They had also a large mill on a very similar principle but greater stones, and could only have been turned by cattle or asses."[1]

This description of what is perhaps the oldest form of corn-milling could be almost literally applied to the stone-milling of to-day, excepting, of course, that the labour of men and animals is now replaced by some other form of motive power. No doubt the domestic nature of the industry accounts to some extent for the apparent reluctance to change in its methods, though this

[1] *See* Sir J. G. Wilkinson's "Manners and Customs of the Ancient Egyptians." [Edited by Birch.] London: John Murray, 1878. 84s.

may also be in some degree a tribute to the genius of the first inventor of the mill.

There are many references to mills and millstones in the Old Testament, but we learn little more from them than what has already been described in the quotation from Wilkinson. We find, however, that later on, the mills came to be driven by bondsmen, around whose necks was placed a circular machine of wood, to prevent them from putting their hands up to their mouths and so eating the meal. It seems, too, that the Egyptians possessed water-mills, for Sir W. Fairbairn mentions the use of the water for the irrigation of the land and other purposes. [1] From an epigram of Antipater, it would appear that the use of water-mills first became common in the time of Julius Cæsar. "Cease your work, ye maids," he says, "ye who laboured in the mill, sleep now and let the birds sing to the ruddy morning, for Ceres has commanded the water nymphs to perform your task, these, obedient to her call, throw themselves on the wheel, force round the axle tree, and by these means the heavy mill." Public water-mills appear for the first time under Honorius and Arcadius, and the first laws which mention them, about the year 398, show clearly that they were then newly established, and that it was necessary to secure them by the support of the government.

The mills of Rome were erected on the canals which conveyed water to the city. Most of them lay under Mount Janiculum, but as they were only able to obtain a small supply of water they executed but little work. Then, too, owing to the vast number of slaves, and the ease and cheapness with which they could be kept, it was found more economical to use slave labour than to perfect the machinery, and hence all improvements in the latter were long delayed. After the abolition of slavery, however, the mills were quickly and greatly improved, and employed more largely. In the year 536, Vitiges, King of the Goths, led an expedition against Belisarius and succeeded in stopping the large aqueducts under his control, and tried thus to prevent him from grinding

[1] *See* Sir W. Fairbairn's "Treatise on Mills and Millwork." London Longmans & Co., 1878. 25s.

corn. Belisarius, however, overcame the difficulty by erecting water-mills on boats, the motive power being obtained from the river. The boats were moored so that they could be turned with the tide, and hence they were kept always going without regard to which way the tide was running.[1]

According to Pliny, the Romans became very far advanced in the art of corn-milling, their millstones being on the same principle as those of the Egyptians. Fairbairn says of this kind of stone, or quern as it is commonly called, that it is not infrequently found amongst the foundations of Roman villas, or along the lines of Roman encampments.[2] Recently, in disentombing the baker's shop at Pompeii, several large mills of similar kind were found in an excellent state of preservation. Beckman says that water-mills existed in France as early as the year 379;[3] and in the life of St. Benedict we read that he had a mill, worked by an ass, to grind corn for himself and his colleagues.

From all these authorities we may, I think, safely conclude that after the labour of men and cattle, water was the first motive power used to grind corn. It is not until much later times that we first find wind-mills mentioned. In 1332, Bartholomeo Verde proposed to the Venetians to erect a mill to go by wind, and a site of land was granted him, but only on condition that he should surrender it again if his experiment should fail. There were probably, however, a few in existence in the tenth century, and we know that in the eleventh century they were becoming fairly common. It was in that century that the dispute arose as to whether wind-mills should pay tithes to the clergy or not. The question was referred for settlement to Pope Celestine III., who very naturally decided that they should be compelled to pay.

Monopolies of the land, water, food, clothing, and everything else that it has been possible to possess, have from time immemorial hindered the advance of mankind. I do not know, how-

[1] This was probably the origin of the floating mills to be found in operation in Germany to-day.

[2] *See* the "Treatise on Mills and Millwork."

[3] *See* J. Beckmann's "History of Inventions, Discoveries, and Origins," 2 vols., 3s. 6d. each, Bohn's Library Series.

ever, that we can find a more conspicuous attempt at monopoly by an avaricious landlord than one spoken of by Beckmann. "The avarice of landlords," he says, "favoured by the meanness and injustice of Government and weakness of the people, extended their regality over all streams, the air, and wind-mills. At the end of the fourteenth century the monks of the celebrated Monastery of St. Augustine at Windsheim in the province of Overyssel were desirous of erecting a wind-mill not far from Zwolle, but a neighbouring lord endeavoured to prevent them, declaring the wind in that district belonged to him. The monks, unwilling to give up their point, had recourse to the Bishop of Utrecht, under whose jurisdiction the province had continued since the tenth century. The bishop, highly incensed against the pretender who wished to usurp his authority, affirmed that no one had power over the wind but himself, and he granted letters patent, dated 1391, for power to build themselves a wind-mill in any place convenient to them."[1]

The Dutch also seem to have had wind-mills at an early period. Beckman relates a story of a Dutchman who, in 1663, erected in London a wind-mill for sawing timber. He was compelled to abandon his attempt in consequence of the opposition of his competitors in trade.[2] Many other references to wind-mills can be given, but I have said sufficient to prove their existence very early in the history of corn-milling. In all these instances, however, we are met with the fact, that whether the power used to turn the mill-stones was that of human beings, asses, water, or wind, the principle upon which all reduction to meal was accomplished was the same in all countries and at all times. Whateley Cooke Taylor says[3] that water-driven corn-mills were probably introduced into Britain by the Romans, and were certainly in use during the Roman occupation throughout, the period of the Saxon epoch, and during the greater part of the Middle Ages. These were commonly attached to the houses of the great nobles and

[1] *See* the "History of Inventions, Discoveries, and Origins."

[2] *Ibid.*

[3] *See* R. W. C. Taylor's "Introduction to a History of the Factory System." London: Bentley & Son, 1886. 16s.

clergy, and among the obligations of a vassal was that of having his corn ground at the lord's mill. Such mills were regarded as essentially appertaining to the land, and as being, in fact, implements of agriculture rather than of manufacture.

It is very seldom, though, that the millers are mentioned as a craft or trade, and they do not appear to have been considered a very great or important body at any time. But gradually as the years went by and more of the men engaged upon the land were drawn or driven into the towns, and other industries sprung up and developed, the corn-mills must have increased in size and number. Corn-milling, however, seems never to have made any very rapid strides under the old system of stone-milling. Improvements many and varied were made in the machinery for cleaning the grain, and also for separating the flour from the offal, but the same principle adopted by the Egyptians, Assyrians, Greeks, and Romans, obtains down to the present day in stone mills. The wheat is fed into the centre or eye of the upper revolving stone, and gradually worked towards the outward edge. From there it is delivered down the spouts into a conveyer, and thence to elevators, which carry the meal to the machinery which separates the flour from the offal.

It is impossible now to say when and where steam power was first applied to corn-mills, but we may reasonably suppose that it took place at about the end of last century, when the same change occurred in most other large industries. The change, however, was not immediately succeeded by any important effects in this industry, and the old principle of the revolving stone continued to dominate the trade for many years after steam was introduced in it.

The modern system of corn-milling is by chilled iron rollers. One of its chief advantages is the possibility, very early in the process, of removing the greater part of the offal. Milling experts claim that by this means they are able to get a superior article from the same class of material, and in addition can secure more of it than they could under the old system. This new process dates only from 1863. According to W. R. Voller,[1] who is the

[1] *See* "Modern Flour Milling," by W. R. Voller. London, 1893.

most recent authority, in that year a distinct change in process was made in one of the large mills of Buda Pesth, which was then the greatest milling centre of the world. Rollers were employed to do reducing instead of millstones. The change was effected quietly, and attracted no great notice at the time. But clever men associated with the Hungarian mills watched the experiment closely, and soon saw the possibility of a great movement. The plan for a complete roller system was matured, and in 1869 the mill just alluded to was fitted up with the first plant of that description. In a foreign office report for 1885 [1] there is the following quotation referring to corn-milling:—"This industry has been undergoing a transformation from the domestic to the manufacturing style. The mill of poetry and painting with the accessories of meadow and willowy brook is retiring from the landscape, and its work is being done in towns . . . in the new system the grain is not ground between stones in the patriarchal fashion, but is compressed by steel and porcelain crushers." In 1881 an exhibition of milling machinery was held in the Agricultural Hall at Islington. By that time several roller systems were actually working in England, and at the exhibition a few complete mills on a small scale were in full operation. Millers from all parts of the country attended, and from this point the doom of the millstone system may be said to have been sealed, as thenceforward the leading milling engineers were crowded with orders to erect roller mills. Many mills were built in Germany, France, America, England, and other countries, on the improved system, and one, as recently as 1891, has found its way to Jerusalem, fitted out on the modern system, and rendered complete by an electric light installation.

Perhaps one thing in connection with corn-milling can be dealt with here a little more fully, namely, the treatment of the different products from the raw material. Some kind of sieve was used to take out the rough bran from the meal at an early period of the world's history, and we are told of sieves of grass and other fibrous

[1] No. 26; 1885; p. 69.

material which have been found from time to time. In this, as in other things, the improvements in the machinery of the modern system stand out very prominently. Under a process of gradual reduction, the various products are passed through silks of the finest texture. This necessitates constant watchfulness on the part of the operatives, to see that the machines are doing their work in a proper and efficient manner, in order that a uniform percentage of flour may be regularly obtained, and also that the offal may be thoroughly cleaned with the least amount of waste.

But although modern milling has thus retained, until very recent years, the methods of ancient civilisation, a very important difference in the economic conditions under which the operations are carried on has occurred. With the ancients the mills were used almost exclusively to supply the needs of the family to which they belonged, while to-day they belong to, and are worked in the interests of, a few persons possessing great wealth. In other words the system of capitalistic production has long driven the old domestic system out of this industry, and all the worst features of the exploitation of labour in order to gain high profits have appeared in the trade. But if the economic position of the workers has thus deteriorated, the same cannot be said of the physical conditions under which the labourer works. In this respect there can be no doubt but that the modern system is much better than the old, not, however, owing to any humane consideration for the workers' health on the part of the proprietors of the mills, but rather owing to the fact that the unhealthy nature of the occupation was due to the large quantities of dust which used to fly about in the stone-mills. This meant more waste and consequently less profit, and it may be safely assumed that these are the causes to which the change of system is chiefly due. Nevertheless, there are still many mills in which some improvements in ventilation are urgently required. Dr. Arlidge, who has devoted much time and study to this subject, says that "the milling has within comparatively few years been transformed by the introduction of steel rolls in the place of the old millstones, and of marvellously contrived

automatic machines, scarcely requiring the interposition of human hands from the beginning to the termination of the whole process of making flour. By these machines the separation of the bran, the germs and the semolina is carried on in enclosed box-line construction whereby the escape of dust into the surrounding air is obviated. Nevertheless, as the miller requires from time to time to withdraw samples for testing. . . . it does not entirely cease to be a dust producer, and the flour makes itself visible on the clothes of the miller, as well as on surrounding objects. After the lapse of years it also produces shortness of breath with cough and other effects on the chest and lungs."[1]

In regard to the intellectual aspect of the trade everyone will agree that where there is so much, and so valuable machinery under the control of the operatives they must be possessed of a fair average amount of intelligence. We shall also agree that usually those who possess the most knowledge are also the best workmen, and hence there may be some support here for the plea raised for technical education for the millers. All that this can mean, however, with our present system of private ownership, is that the workmen will become better machines, and thus earn larger profits for their employers. It must not be inferred from this that I am in any way opposed to technical education, but I see clearly that if it is to be of permanent benefit to the workers it must be accompanied by the collective ownership of the machines on which they work. That this will be the ultimate stage of the corn-milling industry I both hope and believe. Already, indeed, we find the tendency is to build larger and larger mills, and so crush out the smaller ones, and with this centralisation the growing cry for collective control must increase and become more effective.

The wages of men employed in corn-mills are at present very low. It is, however, impossible to give any detailed statistics of earnings, as they vary in almost every mill. Thus, if we take

[1] *See* "The Hygiene, Diseases, and Mortality of Occupations," by J. T. Arlidge, M.D., F.R.C.S., etc., pp. 383-7. London: Percival & Co., 1892. 21s.

London, we can find some men employed for no more than 18s. per week of 58 hours, while others can be found, doing of course different but not necessarily more laborious work, who receive as much as £2 per week of the same hours. Overtime is systematically worked in almost all the mills, especially by the lower paid classes of workmen, and it is curious to note that it is frequently paid for at a lower rate of pay than the ordinary time. Thus there are men who are paid 6d. per hour in the day who receive only 5d. per hour overtime, and others at 5d. per hour in the day only receiving 4d. when working overtime, a state of things which is certainly not desirable in, or creditable to, any trade.

The state of affairs in these respects can no doubt be attributed largely to the fact, that the millers have never had a strong Trade Union to look after their interests. Thus their wages and hours have been left to be fixed by the employers, uncontrolled by any force which could obtain decent conditions for the men. The absence of any powerful organisation in the trade may be ascribed in part to the fact, that until the last forty years or so the men had not any opportunities for mutual association on a large scale, as wind-mills seldom employed more than one man and a boy. The small size of the mills in which they worked, and their scattered and isolated state, no doubt prevented the growth of combination. But the industry is no longer carried on under these conditions, and the time has now come for the operative millers to take their share in the struggle for the emancipation of labour.

Both in America, and in Australia, Trade Unionism is already much stronger in the corn-milling industry than it is here, and the workmen there use their organisations very effectively for their own benefit. At a meeting held in the Trades Hall, Victoria, in the month of June, 1891, it was stated by the Secretary of the Amalgamated Millers' Association of Victoria, that through the efforts of the Association aided by the Operative Bakers' Union, all the flour-mills throughout the colony were, with few exceptions, working on the eight hours system. And, later, we find that the

Operative Bakers' Union had pledged itself to use every effort to prevent the use of any flour milled in other than eight hour mills. The unions in these two industries have thus been enabled by working together to deal very effectively with this important question, not so much by strikes, as by obtaining the sympathy and assistance of the public in boycotting bakers and storekeepers who purchased or sold flour not made under Trade Union conditions. In January, 1893, the Unions were still actively employed in this work, as appears from a note in the *Miller*, a Mark Lane milling trade journal of that date. It was as follows:—

"LABOUR AT THE ANTIPODES.—If the reports of the proceedings of the Amalgamated Millers' Association of Victoria, which appear in the Australian papers, are worthy of implicit credence, it is plain that that body of operatives is capable of putting very severe pressure on capital. At a recent meeting it was stated that the 'vigilance officer appointed by the Bendigo Branch of the Amalgamated Millers' Association to watch for the arrival of consignments of non-union flour,' had reported 'that not one bag of non-union flour had come to Bendigo for over three weeks.' This result had been brought about, it was said, by the 'resolution of the working classes to boycott bakers or storekeepers found purchasing brands of flour manufactured under "freedom of contract" rules.'"

The first attempt to form a National Trade Union of Millers in this country, with which I am acquainted, was made at Liverpool in 1853, just forty years ago.[1] It adopted as its motto the well-known text from Isaiah xli., "They helped every one his neighbour, and every one said to his brother, "Be of good courage." Only millers and their apprentices were admitted to the society, and one of the rules contained the somewhat singular provision

[1] There had been previous trade societies among millers, but of a local nature only, so far as I am aware. Thus there is preserved in the British Museum a copy of "The Articles and Rules to be observed by the Generous Friendly Society of Millers," bearing date, Newcastle, 1813, and it is very probable that other similar local trade clubs existed among them.

that "Any member joining the Militia after initiation shall be expelled from this Society." Their definition of a miller was one who dressed the millstones and actually attended to the grinding of the corn. Thus they excluded from their ranks the ordinary labourers largely employed about the mills. The organisation never became a very militant one, and indeed degenerated into little more than a trade friendly club. It existed many years, growing gradually smaller and smaller, and at last died out altogether.[1]

In 1889 its place was taken by the Millers' National Union, a militant new union which admitted into its ranks every man employed in and about a corn-mill. This society spread with great rapidity, chiefly in the north of England and Ireland, and numbered at one time as many as 4,000 members.[2] It obtained many important concessions from the employers. In the Halifax district of Yorkshire, after a few weeks' strike in 1892, the working hours were reduced to 53 per week, with time and a quarter pay for overtime worked, and double time for work on Sundays and all public holidays. Already, in 1890, it had obtained for its London members a considerable reduction of working hours by the gain of a Saturday half-holiday—a boon long wished for by the men in the trade. There can be but little doubt that when the milling operatives are prepared to organise themselves as strongly as other trades are, they can easily obtain many other concessions and advantages.

[1] This society was a proper national trade friendly society. Its contribution was 5d. per week, and it provided out-of-work, travelling and superannuation benefits, in addition to a death benefit of £7 10s., and the proceeds of a levy of 1s. on every member to anyone injured by accident. It appears to have reached its highest point about 1870-4, for in 1871 it consisted of sixteen branches, with Liverpool as headquarters. Its greatest strength was in the north of England and the Midlands, though at that time it had a London branch as well as others at Croydon and Guildford.

[2] This society is still in existence and carrying on an energetic and useful work. But it is considerably reduced in size, and consequently impaired in efficiency, since 1892, owing to the bad state of trade and some internal dissensions.

The milling industry is not affected so greatly by foreign competition as some industries are, but nevertheless it has to face a very keen competition from America. That land is possessed not only of enormous advantages in the raising of wheat, but also of the ability to command the assistance of the vast water power readily obtainable from its great rivers. Speaking on the subject, Voller says: "The miller in America, though actually over 3,000 miles farther away, is frequently nearer or quite as near to the baker as his British competitor in point of cost of transit.[1] Mills of mammoth dimensions are erected in America, but chief among them stands Minneapolis, the chief town of the State of Minnesota. These mills are favoured by magnificent water power wherewith to turn machinery cheaply. They occupy a grand position as a receiving centre to draw the unrivalled spring wheat grown in the State of Minnesota, and the adjoining States of Dakota and Wisconsin, and have a choice of routes to send the manufactured goods to the coast. It is indeed difficult to conceive a place better suited for flour-milling, and it is superfluous to remark that our American friends have utilised to the full every advantage they possess. Mill after mill has been established at Minneapolis, till now some 22 mills—none of them small—have got to work. They have a total weekly capacity of about 180,000 barrels, and it is said to be the finest collection of flour-mills in the world."[2]

America is thus in a position to send us the ready milled flour, but we draw our wheat also largely from other places. Thus India, Russia, Persia, Australia, Canada, New Zealand, Egypt, Turkey, and the Baltic districts all combine to send their agricultural produce in the shape of wheat to our ports. This is by no means due to the fact that their wheats make better bread than English grown wheat. The dry, chaffy loaves we often find upon our tables nowadays are vastly inferior to the home-baked bread,

[1] It is to be noted, though, that the American railroads have, in recent years, successively and greatly increased their rates for the conveyance of grown and manufactured products.

[2] *See* "Modern Flour Milling," by W. R. Voller, p. 197.

made of flour produced from English wheats, which we still sometimes get in country districts. It is said that we cannot grow sufficient wheat in England to feed the people. On the other hand, however, we could obtain an average of 25 bushels of wheat per acre from 8 million acres of land, and this will feed 32 million people for twelve months. This being so, there can be no truth in the supposition that we could not grow sufficient, as we certainly have this number of acres of land which could be used for corn growing. But there are other causes at work. Wheat can be brought to London from New York to-day at a cheaper rate than it can from many of our agricultural districts. Thus English wheat is very little used by London millers, who could not get it if they wished, and while we are thus allowing our own land to go uncultivated, our people are being fed from fields 3,000 miles away. This is a state of things that ought not to exist, and it is certain that by some means reductions in excessive railway rates must soon be made in the interests of English producers.

A few words in conclusion may be added. The men employed in the milling trade must no longer stand aside from resolutely assisting to solve some of the problems of to-day. They must join their Trade Union, and, standing shoulder to shoulder with their fellows, they must fight and advance with the rest of their class. By this means, and by educating themselves and developing the necessary administrative capacity, they will be prepared for the exercise of an increasing and more effective control over their industry. But all the work will not be accomplished by the efforts of their trade society as such. Some assistance may be expected from and must be rendered by Parliament. Powers should be granted to county and district councils to establish, wherever necessary, municipal corn-mills, perhaps, it may be, in connection with municipal bakeries. Eventually, too, the railways and canals will become the property of the community, and, meanwhile, steps should be taken by Parliament to check the grasping rapacity, and to reduce the exorbitant rates, of the railway companies. Finally, something must be done to limit the tax which the idle recipients of rent and interest levy upon the industry and the enterprise of

the community. The lessening of the burdens upon industry would probably result in the products of other countries being supplanted in our towns and cities by those of our own country. The corn-milling industry, being then more highly organised and conducted under municipal or some equivalent control, it would be lifted out of its present chaotic conditions. The mills would then be worked for the benefit of the whole body of citizens, and the employees would be treated with that fair amount of consideration with which democracy is beginning to treat its servants.

The first step, however, towards the attainment of this better condition of things is the recognition of the necessity for joining a Trade Union. Unorganised, unknown, and scattered, the struggles of the workers are futile and disheartening. With organisation, and assisted by that development of morale and character which is always the accompaniment of organisation, the workers can not only secure those small improvements in the details of their trade which will make life so much easier for them now, but can look forward to a time when democracy will be able to enter upon the possession of the glorious heritage that is awaiting it.

ENGINEERING.

By J. Swift., Amalgamated Society of Engineers.

THE engineering industry dates, for all practical purposes, from the introduction of steam as a motive power, and its application to the purposes of manufacture. Some account, therefore, of the history of the steam engine is a necessary preliminary to a paper on engineering.

It is still popularly supposed that James Watt was the inventor of the steam engine. But such is not the case, and the earliest beginnings of the use of steam power are lost in the romance of antiquity, leaving us but scanty means whereby to trace them. These means are historical allusions, and chiefly a philosophical treatise on the "Inventions of the Ancients," by Hero of Alexandria.[1] Historically, however, since Hero recorded the existence of the steam engine, no retrogression marks its progress.

The earliest mention I can find recorded of the power of steam or some such agency, is expressed by Homer (927 B.C.), who, in his Odyssey, makes the Egyptian prince thus address Ulysses the Greek :—

> "Now, Sir, be pleased you would yourself declare
> Where you were born, and what your parents are,
> And your abode ; so that we may instruct
> Our ship you to your country to conduct.
> We use nor helm nor helmsman. Our own ships
> Have souls, and plough with reason up the deep
> All cities, countries know, and where they list
> Through billows glide, veiled in obscuring mist."

[1] Hero is supposed to have lived about 225 to 150 B.C.

This is a glowing description of navigation conceived and described nearly three thousand years ago. If not partly realised by some potent agent whose powers seemed illimitable to Homer, and if the ancient Egyptians employed neither steam nor other motive power to propel their ships, then Homer conceived and clothed with brilliant language a great idea, all but literally embodied in modern navigation. In 390 B.C. Plato described a vapour formed of "water melted by heat into air, which could be compressed again into water;" a very correct description of the generation and condensation of steam, although the word steam was not used. It is also generally admitted that Archimedes, the great geometrician and mechanician, was conversant with the powers of steam and steam mechanism, and he is believed to have employed it in some of the defensive engines used at the noble defence of Syracuse against the Romans. Like other sources of information existing previous to the burning of the Alexandrian library by the Saracens under Oman, 640 A.D., the records relating to steam, with the single exception of Hero's treatise, were in all probability lost. Many of the inventions he describes[1] are very ingenious, and display an accurate knowledge of the properties of steam, air, and water. Amongst the number are a syphon, a fire-engine pump, a water clock, steam engines, altar libation engines, and automatic machines closely allied to some very recent inventions. Hero gives two illustrations of engines used by the priests for altar purposes, and they were undoubtedly well calculated to prove extremely efficacious in stimulating that feeling of veneration with which the ancients regarded their idols. In the Egyptian gallery of the British Museum is a small altar of libations, consisting of a central tank, and in the bottom of which are three holes as if for pipes, the whole being arranged after Hero's design.

From Hero's time no endeavour seems to have been made to apply the power of steam to any useful purpose until 1543, when a Spanish naval captain named De Garay proposed to propel ships by steam. His plan was kept secret, but a

[1] Hero describes in all some 78 inventions, claiming some of them as his own, but not specifying which.

steam boiler was on board, and the paddle wheel was seen to propel the vessel. The result of a trial at Barcelona before the Spanish court was, that a vessel of 200 tons burthen was propelled about 3 miles an hour, no mean performance then, and interesting now as showing the progress of steam navigation. De Garay's success was honoured by the court, but his invention was neglected. In 1577 a rotary steam engine was employed to turn a roasting spit, and it was described as a great and clean improvement upon the dog previously employed in the work, and who was not always proof against pawing the savoury temptation beside him. In 1680 Papin, a French physician, invented the steelyard safety valve, and suggested many improvements and valuable inventions that have since been reduced to practice. Following Papin came Savary and Newcomen, two English engineers, who exerted themselves to bring the steam engine into general use for draining mines. It was Newcomen who introduced the beam or balance lever. Even on his engine, however, the various valves and cocks were opened by hand, until a young lad named Potter, getting tired of having to turn handles halfway round and back again, ingeniously connected them to the beams by means of strings and catches. Improved connections subsequently displaced his temporary ones, but to the necessity of encouraging Potter's laziness belongs the credit of the introduction of self-acting gear.

We now reach the period when the steam engine emerges from the experimental, and enters upon the practical stage, and it is to James Watt that the credit of this is mainly due. Watt was born at Greenock in 1730, and the fortunate opportunity of having to put in order a working model of a Newcomen engine, belonging to the Glasgow University, proved the starting point of his marvellous inventions. He devoted much of his energy to improving the use of steam in clearing mines of water, and with a success which astonished the world. The vast improvements he wrought in its mechanism stamped his name upon the steam engine as if it had been his own original invention. During, and following his life, numerous attempts were made to apply steam to navigation, but

without any great success. In 1802 Symington, a Scotch engineer, made the first paddle-wheel boat of the modern class, but his invention was rejected as useless, and this efficient steamboat was laid up in Scotland, and for years was exposed to public ridicule. It is to America that credit must be given for the successful introduction of steamboats. An American engineer named Fulton visited Scotland and made himself acquainted with Symington's neglected invention. Returning to America he promptly introduced steamboats which ran on the Hudson between New York and Albany.

The attempt made to apply steam power to the purposes of navigation stimulated the minds of men of skill and invention to apply the same powerful agent to the ordinary requirements of the road, and long before Stephenson's time, various steam carriages were made. In 1759 Murdoch, an assistant of James Watt, invented a steam carriage, and in 1763 a yet more remarkable machine was invented by M. Cugnot, which is still preserved in the Conservatoire des Arts et Métiers at Paris. In 1802 Richard Trevethick, a Cornish engineer, took out a patent for a steam carriage which was exhibited to crowds of spectators on what is now the site of the Euston Station. He afterwards constructed another steam carriage for railway purposes, which, in 1804, ran on the Merthyr Tydvil tramway in South Wales. It drew a load of 10 tons at the rate of 5 miles an hour, but, having run off the road, it was allowed to lie in the ditch as a worthless piece of mechanism.

In 1813 George Stephenson was empowered by Lord Ravensworth to construct a locomotive engine. It was tried at Killingworth in July, 1814, and drew a load of 30 tons at the rate of 4 miles an hour. Not being satisfied with the result, in 1815 he constructed and patented another, which doubled the speed of the first. By gathering together the inventions and suggestions of others, and adding various improvements of his own, George Stephenson succeeded eventually in constructing an engine which contained the germ of all that has since been effected. His name is as indissolubly connected with the locomotive engine as that of James

Watt is with the stationary engine. The names of many other scientists and engineers who helped to bring the locomotive to the point where Stephenson found it, will readily occur to most people. Sir Isaac Newton who first suggested the steam carriage; Thomas Gray of Leeds who suggested the use of iron railways; Mons. Cugnot; William Murdoch; Richard Trevethick; Blenkinsop of Leeds, and Blackett of Wylam, must all be honourably remembered in connection with the system of locomotion which has completely revolutionised the industrial, and, to a great extent, the social life of civilised nations.

It is unnecessary for me to trace in detail the growth of the locomotive engine from George Stephenson's time up to the present. From 1829, when the Rocket at a public competition drew after it about 13 tons weight in waggons, and, including stoppages, made a journey of 35 miles in 1 hour and 48 minutes,[1] up to the present time, the history of the locomotive engine comprises a vast series of improvements in detail far too numerous to be mentioned here, until now it is one of the most perfect and beautiful of all the machines with which the engineer has to deal, and one of which he is justly proud.

Side by side with this progress in land locomotion we may notice similar and equally rapid improvements in the marine engine. Nor have these improvements been confined to the science of locomotive engineering. The stationary engine used for manufacturing purposes has progressed in about the same ratio. But it has not been without competitors. Gas, electricity, and, quite recently, petroleum, have been introduced as motive powers for manu-

[1] It may be interesting to compare this accomplishment, wonderful as it was in its day, with the achievements of modern engineering science. Messrs. Dubbs & Co. of Glasgow are building for the London & North Western Railway Company a locomotive engine, designed by Michael Reynolds of Wolverhampton, which is estimated to attain a speed of 100 miles per hour. It is to register 2,000 horse-power, the driving wheels will be 12 feet in diameter, there will be 3 cylinders, 18, 28, and 40 inches respectively in diameter, with a 30 inch stroke. The steam pressure will be 200 lbs., and it is expected that she will make the journey between London and Edinburgh in 6 hours.

facturing and locomotive purposes, and there seems no manner of doubt that in the future of engineering the two latter will play an exceedingly important part. In all the other branches of the engineering industry, such as sanitation, the making of roads, tunnels and bridges, the same story of rapid and enormous advance could be told.

Before proceeding to deal with the engineering industry as it affects the workman, it is necessary that some of the great mechanical inventions that have made the industrial history of the eighteenth and nineteenth centuries so memorable should be briefly touched upon. There is a great absence of reliable information as to the earlier mechanical appliances in use in most industries, the ordinary course being to summarily close all investigations into the early history of manufactures with the remark that "all labour was manual." This was certainly not the case, although up to the time of Elizabeth, at any rate, the mechanical appliances used in production were few, and of a very rude kind. There were water-mills from the time of the Romans, and wind-mills from the time of the Crusades, but of the precise character of the processes performed in these mills, and the extent and nature of the labour-saving appliances which they contained, there is scarcely any information accessible. We may, however, for all general purposes, say that it was in the textile industries that labour-saving machinery was first introduced to any large extent. The first symptoms of that jealousy of machinery which afterwards became a conspicuous feature in the development of English industry, were manifested in 1482, when a complaint was laid before Parliament "that certain articles of clothing, hitherto made with hand and foot, were now being made by the use of tucking and gigge mills," and a statute was enacted forbidding their use. For two centuries later, the statute books contain frequent enactments, forbidding the use of machinery in various industries. In 1543 a machine was invented for making metal pins. In the latter part of the reign of Elizabeth, William Lee invented the stocking frame which he brought to such perfection that it long remained practically as he left it, without receiving any essential improvement. Aware of the national importance of his invention, he took it to court, but

the period of his visit was not propitious. Elizabeth was in the last stage of her decline, and her successor, who saw Lee and his brother make a pair of stockings, looked upon the invention rather as a dangerous innovation, likely to deprive the poor of labour and bread, than as a means of multiplying the resources of national industry, and of giving employment to many thousands of men. In spite, however, of kingly hostility and courtly indifference, the stocking frame made steady way, and in time its effect upon the industry reacted upon most of the other textile trades.[1] For over 50 years, indeed, the tide of invention ran almost exclusively in the direction of new and improved machinery for the textile industries, but with the introduction of steam power to manufacture, invention took a wider scope, and has since flowed into every conceivable industry. The whole trend of modern manufacture, indeed, appears now to be in the direction of making machinery do the work formerly done by skilled handicraftsmen. Thus the artisan is reduced to a mere machine-minder, engaged in constant repetitions of a process little more than mechanical, and the results of this change upon his intellectual and economic status have no doubt been often detrimental to the workman, at any rate for a time.

The temporary and immediate loss thus sustained by the workers, has led many to cavil at the introduction of machinery. But we must not allow ourselves to be blind to the fact that, although its immediate effect may be detrimental, yet it must tend ultimately to the advancement of the workers. For the present, however, inventions have poured upon us so rapidly that the powers of organisation possessed by the workers have not been able to keep pace with them, and hence the labourers have been unable to successfully demand their fair share of the increased product resulting from the use of labour-saving machinery.

As the manufacture of labour-saving machinery constitutes so important a part of the engineering industry, it is perhaps desirable that a few words should be here said upon this side of the question. And first a few facts as to the rapid displacement of hand labour

[1] A full account of the stocking frame will be found in the "History of the Machine-wrought Hosiery and Lace Manufactures," by W. Felkin. London, Longmans & Co., 1867. 21s.

by machinery which is actually taking place. In agriculture, machinery is rapidly replacing the farm labourer. According to the census returns, between the years 1861 and 1881, some 110,000 partly skilled and unskilled farm labourers were driven from their usual occupation, and replaced by about 4,000 skilled artisans making machines, which were worked by about 4,500 semi-skilled labourers. In the production of agricultural implements also, new machinery has, during the last 15 or 20 years, displaced fully 50 per cent. of the manual labour formerly employed. There has also been recently introduced a machine worked by a petroleum engine which will with four men fell the same number of trees in the time it would have taken 30 men to accomplish in the old style. Even the humble calling of fire-wood cutting has not escaped, and machines are now in operation which will do both splitting and bundling. Each of these machines will, according to its size, do as much work as was formerly done by 12 to 48 men.[1] In boilermaking and iron shipbuilding, the hydraulic riveting machine will, with one skilled labourer to attend it, do as much work as 9 men under the old system of riveting by hand. Mr. Knight, the General Secretary of the United Society of Boilermakers and Iron Shipbuilders, computes that 15,000 men have, during the last 30 years, been displaced by the introduction of this machine alone. Nevertheless, between 1861 and 1881, the number of boilermakers in the United Kingdom was more than doubled. In the Cleveland iron mines drilling machines have been introduced that will, with one man to attend them, do the work of ten men. We have only to walk round any of the docks to see to what an extent machinery is taking the place of the manual workers there. With the introduction of the elevator, the trimmer, and the hopper, a vessel containing 400 tons of grain which has to be discharged, trucked to the nearest warehouse, weighed and delivered, and would under the

[1] The inventor of this wood-cutting machine, not content with the suffering thus caused to the poorly paid fire-wood cutters, has placed upon the machine the motto, "Strikers checkmated," which seems quite an unnecessarily cruel way of adding insult to injury.

old system have employed 108 men, and cost in wages £24 13s. 4d., can now be done by machinery with 36 men, at a cost of £10 12s. 1d. Against this has to be placed the cost of the machinery in the first place, and the wear and tear of the same, but this is no advantage to the men displaced, and only means increasing somewhat the work of the engineers in the manufacture of such machines. Yet another example is that of the steam-navvy or excavator. The engineer of the Manchester Ship Canal, Sir Leader Williams, in a testimonial which he has given to Messrs. Ruston and Procter, the engine builders, says that about 2,000 cubic yards of good material has been excavated in 10 hours. We shall however, be quite within the mark to estimate the quantity worked at 1,000 cubic yards, which will give us the following displacement of hand labour :—

Men employed and wages paid per day with steam navvy :

1 engine-driver, 7s. 6d., 3 labourers at 4s. 3d. each,	£1 0s. 3d.
12 men employed laying rails, etc., at 4s. 3d. each,	2 11s. 0d.
	3 11s. 3d.
It would require 50 men to remove the same quantity by hand-labour at 3s. 10d. each,	9 11s. 8d.
Which means 34 men displaced at a saving of	£6 0s. 5d.

Nor has the engineering trade itself escaped from this tendency to replace hand by machine labour. One often wonders how it would affect the minds of some of the old-time millwrights if they could revisit the scenes of their labours, and closely examine a modern engineer's shop, with its complement of labour-saving machinery. One of Brown & Sharpe's milling machines will do, in a given time, as much work, and finish it quite as accurately, as ten men could in the old style ; and it is a common saying amongst mechanics that those machines can do anything but talk.

In the iron and steel industry marvellous improvements have been made since 1856, when Mr. Bessemer introduced his process of directly converting tons of pig iron into wrought iron in a few

minutes. Soon afterwards he introduced his method of manufacturing steel, which enormously reduced its cost of production. By this process, from one to thirty-five tons of crude iron may be converted into steel in thirty minutes, while by the old process it took from two to three weeks, and instead of only costing £6 or £7 per ton, its cost was £50 or £60 per ton. Even house painters have not escaped, for at the Chicago Exhibition there was a painting machine used that did nearly the whole of the painting, employing only 300 men, whereas in the usual way it would have taken from 3,000 to 4,000 men; and when visiting Birmingham at the beginning of the year, I was shown a machine called a converting machine, which turned leather into pigskin, alligator skin, or any other fancy hide, by simply passing it through marked rollers,—true Birmingham ware. In the printing and allied trades, the progress of invention and machinery has been so marvellous, and its effects are so patent, that there is no need for me to dwell upon them. In short, there is scarcely a trade or industry in the kingdom in which some machinery which displaces a considerable amount of hand-labour is not now employed.[1]

I have felt that it is absolutely necessary to enter at some length into these details, although they may appear to be somewhat outside the scope of my paper. They show, however, far more clearly and forcibly than would any other means, the extent of the development of the engineering industry, and enable us to more readily conjecture its probable future growth. Side by side with the introduction of improved machinery has grown up the system of subdivision or specialisation of labour. The advantages or otherwise of this system are a matter open to considerable discussion, but I am compelled to differ very strongly from the opinions expressed by some of the leading political economists in regard to it. Thus, in his "Economics of Industry," Professor Alfred Marshall says that "the introduction of machinery, with its concomitant subdivision of labour, relieves not only the muscular but the nervous strain of the mechanic, and tends to do

[1] Most of the examples quoted are taken from James Samuelson's "Labour-Saving Machinery." London: Kegan, Paul & Co., 1893. 2s. 6d.

away with the monotony of his toil."[1] He further quotes examples, which clearly show how little practical knowledge he possesses on this particular point. After stating, for instance, that the tendency of machinery was in the direction of becoming automatic, he goes on to say that the persons who mind it must have an intelligence and an energetic sense of responsibility, which go a long way towards making a fine character. This reasoning appears to involve a complete contradiction, and how far its conclusion is from the truth, only those who have worked those automatic machines, or watched the effects of such work upon others, can form any idea. Adam Smith and John Stuart Mill wrote much in the same strain as Professor Marshall, and as the subdivision of labour has been carried to a greater extent in the engineering and kindred industries than in almost any other, it is perhaps desirable that a few words should be said upon this subject.

Firstly, then, as to its effects on the skill of the workers. Fifty years ago there existed a class of engineers known as millwrights, who, so far as regarded scientific knowledge were no doubt quite uneducated, but who were, nevertheless, men of great intelligence, whose work-boxes contained the tools of nearly every trade, and who could handle these tools with skill and dexterity. Before the days of easy communication, they used to be sent to great distances in charge of works both extensive and intricate, and generally executed them with a thoroughness and intelligence that left nothing to be desired. Through the subdivision of labour, however, this class of highly skilled mechanics has become well-nigh extinct. By all but "dry-as-dust professors" it is generally agreed that it is the monotony of toil that makes life so disagreeable to the workers. Condemned from early morning to late in the afternoon to repeat the same operation hour after hour, day after day, month after month, and year after year, the effect must be disastrous upon the artistic faculties of the workman. Think for a moment of its vulgarising and stultifying influence on human life and conduct. I very well know a certain factory in

[1] See "The Economics of Industry." London: Macmillan & Co., 1881. 2s. 6d.

H. M. Government works at Woolwich, where the introduction of labour-saving machinery and the subdivision of work are carried out to the utmost possible extent. Hundreds of youths are engaged working automatic machines in connection with the production of fuses, cartridges, and bullets. All that they have to do is the merest mechanical work, one operation only, and this operation having to be repeated in some cases thousands of times in one day. There is little or no chance for the men so employed ever to improve their present condition. As the work calls for very little skill or intelligence, what chance have these youths of exercising their artistic faculties, or their intellectual energies in the performance of such tasks? Can there be any wonder if they turn their attention, for the sake of a little excitement, to the gin-shop, to gambling or horse-racing, and to all kinds of vice and folly? Noticing one day that only youths were employed on these machines, I inquired what became of them when they grew up to be men. I was told that some were made "examiners." The standard of skill required to be an "examiner" may be gauged from the wages paid to them, *viz.*, from 19s. to 26s. per week. Many others drift into the position of yard labourers, and of the rest, those who are not fortunate enough to die go for soldiers. This, then, is one of the evil effects of that subdivision of labour which is rendered inevitable by the necessities of the age. All mechanics will agree with me that the introduction of machinery has not raised the standard of skill among workmen. Nay, on the contrary, it has enormously increased the monotony of their toil, and limited the scope for the exercise of their ingenuity. It must of necessity dull their artistic perceptions, and tend to reduce them to the mere level of machines capable only of repeating one operation so many times per day. The difficulties in the way of altering this system are many, and where piecework is worked the workers will not be likely to insist upon frequent changes of work, as it would in all probability decrease their earnings. But of this I am certain, that if our workers are to be something more than mere machines, we shall have to give them an opportunity of using their skill and intelligence in their work. The more

diversified the work is made, and the less monotonous the toil, the more will the inventive faculties of the workers be quickened, to the ultimate benefit of the state, the workers, and the employers.

It is, perhaps, hardly necessary for me to say that it requires a large outlay of capital to make a modern engineering establishment anything like complete. The tendency is consequently in the direction of eliminating the private employer, and introducing the limited liability company with the board of directors and manager. This, however, is by no means a subject for dissatisfaction to the workmen, as there is frequently much less sweating carried on in large firms, or companies, than in the smaller shops, which are governed directly by the employer, who is often forced through want of proper machinery to work his men at the highest possible tension so as to compete successfully with his better equipped rivals. Another advantage of the "grand industry" is, that the larger factories are generally built with a little regard to the health and comfort of the workmen. As already suggested, the greatest blot on the large factories is the subdivision of labour. This must lessen the interest that the engineer takes in his work, for in proportion as the subdivision of work increases, so the need for skill and intelligence diminishes. I do not mean to imply that the working engineer of to-day is in point of intelligence inferior to the artisan of 50 years ago, for, on the contrary, he is undoubtedly far superior. That, however, is not to be traced to his work, but to increased educational advantages, greater political freedom, and the effects of Trade Unionism.

Of these three main sources to which the superiority of the present-day artisan over his forerunners must be attributed, the first, that of improved educational facilities, is too obvious to call for remark. The second, that of greater political freedom, will not perhaps be quite so generally or readily admitted, although it seems to me to be self-evident that greater powers of self-government, and more political responsibility, have materially assisted in the growth of intelligence and thoughtfulness among the artisan class. Of the third of these three factors, that of the influence of Trade Unionism, more must here be said. It is not my intention

to inflict upon you a lengthy history of the Trade Union movement as it has affected the mechanic, from its inception up to the present time, but only to notice a few of its most conspicuous features. Before the repeal of the anti-combination laws in 1824, there were small and more or less local societies in the different branches of engineering industry. The meetings of their members were held, we are credibly told, on lonely heaths or sequestered moors, or more often in some barn or cellar, with a sentinel posted outside, whose duty it was to give an alarm at the approach of any officer of the law. With one or two exceptions, not much reliable information is to be gathered in reference to the Unions connected with the engineering industry during that period.[1] Most of it rests on oral testimony and tradition handed down from father to son. I have interviewed some of the oldest men in the trade, but I have not been able to procure much information of an earlier date than 1830. One fact, however, has been forced more powerfully upon my mind than hitherto, and that is the intensity of the struggles which the members of the earlier Unions must have undergone, and how much we have to thank the pioneers of Trade Unionism for the liberty which we now enjoy. If the men of the new movement, instead of shouting about the "old fossils" and reactionaries, will only apply the same amount of sincerity, self-sacrifice and faith to the Trade Union movement of to-day, we should not hear so much opposition to the theory of a living wage, and law-makers, law-dispensers, and employers would not treat the

[1] A great deal of very reliable information regarding the early history of some of the Unions in the engineering trades is still in existence. Thus the Friendly Society of Ironfounders, established 1809, has continued an uninterrupted existence since that year, and its archives contain valuable historical documents reaching back to the early part of the century. The Steam Engine Makers' Society, also, has preserved a continuous existence since 1824, when it was, on the repeal of the anti-combination law, reconstituted as a Trade Union from some previously existing trade friendly clubs. For a complete account of the history of Trade Unionism both in the engineering and other trades, and generally, the reader is referred to the "History of Trade Unionism," by Sidney & Beatrice Webb (Longmans, 1894, 18s.).

workmen as a commodity to be bought at the cheapest possible price, or as a mere dividend-producing machine. In 1824 the Steam Engine Makers' Society was established, and exists up till to-day, though numerically not very strong, and about the same time all over the country small sectional societies sprang up, each working under different rules and conditions. In 1851 several of the previously existing societies amalgamated, and formed the now well-known and powerful Amalgamated Society of Engineers.[1] In July, 1851, the men employed by Messrs. Hibbert & Platt at Manchester struck against piecework and the practice of putting unskilled labourers on to the machines. This proved to be the preliminary to a great contest. The men won a temporary victory, but the employers formed an association among themselves for mutual defence. In January, 1852, the Amalgamated Society of Engineers, which had been agitating against piecework and systematic overtime, passed resolutions to restrict these two evils in the trade. The employers met this move with a general lock-out of all their men. They refused to negotiate or to re-open their works except upon conditions most humiliating to the workers, including the signing of a "document," which pledged them to abandon their Trade Union, and decline to join any other similar association. The men struggled gallantly against this for four months, but were then practically starved into submission, the whole of their funds being exhausted, and public opinion strongly prejudiced against them. I have spoken to men who went through that fight, and who eventually had to sink their independence, and sign agreements which they never intended to keep, forced to act a lie through starvation. Hundreds drifted out of the trade altogether rather than accept the humiliating conditions. The employers hoped that the Amalgamated Society of Engineers was now crushed out of existence, but, as usual, they entirely under-estimated the strength of the feeling of comradeship among

[1] Of these societies, by far the most important was the "Journeymen Steam Engine and Machine Makers' and Millwrights' Friendly Society," established 1826, which had, in 1848, a membership of over 7,000 men, and an accumulated reserve fund of £27,000.

the men, and of their knowledge of the absolute need of a Trade Union to preserve decent conditions of life for themselves and families. In less than two years the Society was stronger than ever before, having 11,000 members and over £20,000, and from that time its record has been one of unbroken progress, both in membership and funds, till it has now 75,000 members, with an accumulated fund of £250,000, and has paid out in benefits during the last 40 years, no less than £4,000,000. The chief objects of the Amalgamated Society of Engineers are to obtain a minimum wage for its members, and to abolish overtime and piecework, but in neither of them has it been completely successful so far. That it has been the means of raising wages few will deny, and where the Society is strongest there wages are highest and conditions of working best. Overtime has to a certain extent been restrained through putting a tax upon it, making the employers pay time and a quarter or time and a half for all hours worked overtime. On the other hand, this has made the men more ready to accept overtime, because it gives them a higher rate of pay. There is little to say in favour of piecework. If it were beneficial to the men, the employers would not be so ready to force it upon them. Its effect, indeed, is to keep down the rate of wages right throughout the country. To the casual observer, the system of piecework seems to be the proper method of payment. It appears to be simply payment by result. But those who have worked it or thought seriously about it, know that it means much more. Not only does it lead to scamping of work, but it brings into play many of the worst passions of human nature. Men grow suspicious of each other, and envy, jealousy, and distrust are developed under the system. Then it is seldom a question of contract.[1] Foremen or

[1] In the engineering trades, the so-called "piecework" to which the men are so violently opposed, is not really a pure "piecework" at all, but rather a form of "estimate" or "contract" work. No proper list of prices exists, nor, indeed, would such a list be possible, in view of the constant changes in kinds and qualities of the work performed, and of the enormous variations in methods of production, etc. Piecework, therefore, means that the men so employed must themselves give a price for each job

managers fix the price often without consulting the workmen. Some firms, wisely for the men's sake, set a limit to the earnings of the men. Where this is not the case, some men, through special adaptability or greater physical strength, get through their work easier than others, and consequently earn a greater amount. These men are taken as standards, and immediately they earn above a certain percentage more than their ordinary wage, down comes the prices, and they become the whips whereby their fellow-workers are flogged. I need not dilate on the effect it must have on the unemployed. The average earnings of the pieceworker are one-fourth to one-third more than his day-work rate, and no one will be wild enough to imagine for a moment that he gets the extra remuneration without he does at least as much extra work. This means that, on the average, every three or four men working piecework are responsible for keeping one man out of work.

The effects of Trade Unionism in the engineering trade may be briefly summed up as follows. First, it has immensely improved the morals of the workers. By bringing them closer together, and placing them under a system of discipline, they are brought to feel that they are not single units, each fighting for his own hand, but that, within certain limits, each is responsible to his fellow-workers. It inculcates thrift and mutual reliance upon each other's sympathy and assistance in need, while at the same time it breeds a spirit of firm independence, and of strong and united opposition to all forms of industrial oppression, among its members. It has raised wages and reduced the hours of toil, and lessened to some extent many of the other evils of workshop life, such as piecework, systematic overtime, and the favouritism or bullying of foremen. That the unions have not been more successful in their objects than is actually the case is due, to some extent, to their conserva-

separately. In other words, it involves a complete return to the individual bargain, which is, of course, the very antithesis of the Trade Union or "collective bargain." It is against this negation of the Trade Union position that the opposition of the men is so strongly, and rightly, aroused, and their hostility to piecework so-called is not in any way due, as is sometimes supposed, to any theoretic objection to good or quick workmen receiving more wages than the others.

tive tendencies, and their slowness to change and to take advantage to the full of all their opportunities. But still more is it due to the selfishness and desertion of their fellows by the non-unionists, who are content to take all the benefits which the union has obtained, while unwilling to do their share in paying for these privileges. But signs are not wanting that the former of these evils will soon be removed. Already the Amalgamated Society of Engineers has awakened to its deficiencies, and has broadened the basis of its constitution, so as to admit the new branches of the trade into its ranks. It has also turned its attention to the question of educating the youths in the trade in the principles of combination, and has resolved to admit them into the Society as probationary members. Last, but not least, it has realised the vast powers it possesses as a political organisation, and has determined to secure parliamentary representation for its members by men of their own class.[1] This is a step which it is to be hoped other societies will soon follow, so that we may ere long see the Trade Unionists developed into a strong and organised political force, working together for the interest of labour through the channels of parliamentary enactments.

The future of the engineering industry is bound to be a great one, for new sources of employment are opening up in it every day. With the rapid growth of labour-saving machinery on all hands, the engineer is taking the place of the unskilled labourer in all directions. It requires, indeed, no violent stretch of the imagination to conceive that in the near future there will be little work other than machine making and machine minding. Nor is this altogether to be deplored. In spite of the fact that the minding of machinery is a merely mechanical job calling forth little of the better part of a man's nature, it is nevertheless better both morally and intellectually for the worker than is the constant strain of hard physical toil. Indeed, if the workers could secure, either by

[1] The Leeds delegate meeting of the Amalgamated Society of Engineers, held in 1892, lasted six weeks, and resulted in a complete overhaul and revision of the basis and policy of that world-wide organisation.

legislative action or Trade Union control, a fair share of the advantages of labour-saving machinery, especially in the direction of largely diminished hours of labour, its introduction might become an entire blessing, even to the mere machine minder. There can be little doubt that could his day's work be accomplished in a few hours and himself left free to spend the remainder of the day in mental and physical recreation, most, if not even all, the evils induced by his lack of interest in his monotonous employment would quickly disappear. For the maker of machinery much more may be said. His is an occupation in which, if he desires to excel, he must possess a fair knowledge of mathematics, metallurgy, mechanics, and even chemistry. The result is that the genuine mechanic is usually one whose intellect has been sharpened by study, and whose work calls for considerable mental exertion. It is true, of course, that the subdivision of the trade removes to some extent the need and opportunities for the workman to become a thoroughly skilled mechanic. Engineers, so called, are now in reality fitters, or turners, or pattern makers, or smiths, or machinists. But every one of these branches of occupation provides some opportunities for, and gives encouragement to, the workman to exercise some of his faculties, and though it is not possible that every engineer should become a Stephenson or a Watt, yet he may have the satisfaction of feeling that his work is something more than the exercise of mere brute strength. With more effective Trade Union and legal control over the conditions of his workshop life, many further improvements in the lot of the engineer may be made. Firstly he requires a shorter day's work, and one beginning at a later hour than the 6 o'clock in the morning which is now the rule all the year round. More attention, too, must be paid to the factories in which he works in order to secure that they shall be constructed with more regard to the health and comfort of the workers. Steps must be taken to insist that every possible precaution is observed to guard against accidents to the men while at work among the machines, and they must have secured for them adequate compensation against such accidents as are unavoidable by a

thoroughly efficient Employers Liability Act. Some of these things the men can obtain direct for themselves. For others they will need the assistance of Parliament to realise their wishes. But the men in these trades have long learned the lesson of standing shoulder to shoulder in a firm combination to secure their just demands, and they may be confidently trusted in the future to take such steps, whether Industrial, Political, or Trade Union, as will secure their reasonable and legitimate ends.

CASK-MAKING.

By W. Crooks, L.C.C., London Philanthropic Society of Coopers.

HISTORIANS, ancient and modern, have alike failed to furnish any reliable data on which to base an accurate account of the industry of cask-making. It is, however, not unnatural to suppose that the inhabitants of the globe, in every stage of their existence and through every period of history, have always suffered from an unconscionable desire to quench an insatiable thirst. It is, further, convenient to suppose that the dawn of reason, accompanied by marked variations in the intensity of thirst, must have induced primitive mankind to have sought for some method of storing the means of relief. The unreliability of rainfalls, the indefinite character of river supplies, the changes in heat as a result of nomadic wanderings, must all have suggested the wisdom of storing water, to say little of the more attractive nature of human admixtures. As the race increased in numbers and in knowledge, the supply of casks, or some similar vehicle of banking, must have become an important factor in the lives and the happiness of our ancestors, although no information is accessible concerning its actual origin or later extent. There is a picture in the National Gallery which is supposed to convey an impression of the great Biblical deluge. Too much reliance must not be placed upon this picture from an historic point of view, for due allowance must be made for the fertile ingenuity and play of the artist's vivid imagination. But if the picture is to be accepted as a description of a mythological circumstance, the art of cooperage was, even at that extremely early period, already well advanced. The antiquity and importance of the coopers' art, however, rests upon what is probably

stronger ground than this, for it may be remembered that Bacchus selected for his throne a cask of splendid workmanship.

But, leaving the region of picturesque mythology, and descending to that of prosaic history, we find that Pliny tells how the people dwelling at the foot of the Alps in his day, made casks and lined them with pitch. The idea of lining them in this manner was probably for the purpose of making them tight and sound, an operation which is but rarely performed now, and only then with the object of securing cleanliness. Varro and Columella in detailing the precepts of moral economy, mention a trade which seems to correspond exactly with cask-making. And certainly from A.D. 70, in the time of Tiberius and Vespasian, the art of constructing similar vessels with pieces of wood was well known and practised in Italy.

The Romans, living under climatic conditions extremely favourable to the extensive cultivation of vineyards, had naturally a large demand for the carrying power of casks. As their victorious armies carried the Roman Eagle into every portion of the then known world, this demand must have been largely increased, for they forced into subjection the inhabitants of immense territories, ideally fitted for the production of wines, and laid the foundations of what are still, even at this great interval of time, the chief centres of the wine producing industry. It is therefore probable that both the Germans and the French were initiated into the mysteries of cask-making by the Roman legions, and, although, for the particular purpose of wine carrying, skin vessels were for long in great demand, the continental cooper had acquired considerable skill and a flourishing trade, long before the introduction of the art into England.

The circumstances under which coopering became a recognised trade in this country, cannot now be discovered. Indeed, its origin here is clothed with as much historic doubt as is the reign of King Arthur, or the glorious victory of St. George over the Dragon. The earliest references to the trade, known to me, are contained in the records of the ancient city of London, which help to throw some light on the history of the trade, and are full of in-

terest to the cooper as well as to the general public. Thus we find that, on April 6th, 1396, in the reign of Richard II., an ordinance was passed to prevent those "of the Mystery of Coopers" from making casks for beer or other liquors, out of oil or soap tans, as the flavour of the liquors was thereby considerably injured.[1] Some eleven years later, in 1407, another ordinance was enacted providing, that in order to secure good materials and workmanship, every cooper should have a trade mark of his own, which should be impressed on all casks made by him, and so enable inferior articles to be traced to their makers. In that year, 46 coopers registered their marks in the city of London, and the ancient custom thus begun survives to this day, though shorn of the pains and penalties attaching to its infringement in olden times.

The date of the establishment of the Gild or Company of Coopers in London, is not recorded, but we know that, in 1699, the number of its liverymen was 126. A return made to the House of Commons in 1724, shows that the membership had increased to 203, and sets forth that they had existed as a Corporation from "time out of mind." In the ninth year of the reign of Henry IV., it was enacted that casks must be made of pure wood without sap. Other regulations were made from time to time, and in the 23rd, Henry VIII., c. 4., the following provisions for the regulation of the trade were made. Clause 1. The manufacture of casks by Ale or Beer Brewers, either by themselves or their servants, is forbidden. Clause 2. That all casks shall be made of sound and seasoned timber, and to measure 36, 18 and 9 gallons. Clause 7. Gives power to the Wardens of the Coopers' Company of the City of London, to search for unmarked casks in the City, and outside to a radius of two miles. Clause 17. Compels each Cooper to black mark his casks under a penalty for failing so to do.

Thus the interests of the public and consumers against deceit

[1] It is curious to note that a somewhat similar complaint is being raised to-day by the coopers at Cork, in reference to the substitution for butter firkins, of boxes, which are, they aver, neither so clean nor so good for the purpose.

and fraud in trade were protected by legislative enactments, while, at the same time, the Gild or Company, by its regulations and constant watchfulness, endeavoured to uphold and promote the interests and welfare of those engaged in the trade. Whatever may be thought now of the policy involved in such constant and detailed interference in trade matters as was then exerted, both on behalf of the workmen employed, and of the public as consumers, such regulations undoubtedly reflected with accuracy the spirit of theorists and legislators in those days. That the regulations so made proved themselves of great utility to consumer and producer alike, is shown by the fact of their constant enlargement and extension to other industries.

Leaving the dead past with all its interesting problems, and passing over, for want of space, the intervening period, let us now turn to consider the present position of the cooper and his trade. The importance of the industry at the present time may be to some extent gathered from the following facts. The brewery trade alone, in the United Kingdom, and without including the wine and spirit trade, has between eight and nine millions of casks in use. The annual exports of beer and ale from the United Kingdom for the past ten years give an average of 460,000 barrels per year, at an approximate value of £1,500,000, in spite of the steady and considerable decline in the amount of these exports which is taking place. Other large items of annual export are one million barrels of herrings, half a million tons of cement, employing almost as many barrels, and an equally large quantity of alkali and other chemicals contained in many hundreds of thousands of casks. In addition to these staple sources of the demand many other trades find that heavy goods are more easily handled in casks than in any other form of package. Birmingham, for instance, employs three-fourths of its coopers in making casks for hardware and dry goods, while it is worth noting, for its economic significance, that large quantities of mule harness are exported from Walsall and London in casks to the sugar plantations of the West Indies, and the casks so obtained are used by the consignees for the purpose of returning their sugar and its products to this and other countries.

There is no doubt that the trade suffered to some extent by the abolition of the duty on sugar, which caused considerable depression in the ports where it was landed, owing, amongst other causes, to the falling off in demand for casks in which we had previously exported sugar. But whatever alterations in the laws affecting international trade may hereafter be made, it is very improbable that this branch of the trade will ever be again revived. It must be recognised that improved processes for extracting sugar have rendered it both easier and cheaper to import, without loss to its value, in other ways than in casks. It is to be hoped that the growing importation of petroleum and other oils may do much to fill the gap left by the loss of the sugar trade.

Another source from which the industry has of late years suffered to some extent is that of foreign competition, considerable quantities of ready-made casks being imported here from the Scandinavian countries, chiefly Sweden. In this connection the recent trouble at Peterhead is perhaps worth recording as being the first example, of which I am aware, of active opposition to the landing of foreign manufactured articles of any kind. A ship loaded with ready-made herring barrels from Sweden consigned to Peterhead put into the harbour at that port. The coopers with their wives and families and neighbours turned out and towed the vessel right out of the harbour again before her cargo could be discharged. Whether the barrels were landed elsewhere or not I have been unable to ascertain, but it is commonly reported that they were returned to their port of origin.

The earnings of a journeyman cooper to-day will compare favourably with those of almost any other tradesmen, but in saying this, we must remember also that he probably gives more physical energy, and produces more by hand labour than any other mechanic in any country of the world. He is, as a rule, extremely proud of his work, and to emulate a good workman is one of the strongest desires of the majority of the men. When we remember, too, that by hand and eye training alone, without rule or measure, he can and does make his casks with what is practically mathematical accuracy, we must recognise that he is actuated by

some other influence than that of the mere wages he receives. It is no uncommon thing for a master cooper to order his men to make a cask of 36 or 54 gallons capacity, and to allow them a margin of only two pints for errors. Yet, working by rule of thumb, and with nothing but his own judgment to guide him, the cooper will almost invariably perform this difficult feat with complete success. Should he fail, however, he must proceed to alter it at his own personal cost, as the making of casks is almost always done by piecework.[1] This degree of accuracy is commonly attained by all good workmen, and reveals the pride they take in their trade. But there are a few men in the trade who are so exceptionally capable that they can turn their hands at once to any part of the work. They will work hard during the day, making, from the rough, heavy timber, casks of from thirty-six to two or three hundred gallons, and will afterwards turn to making one to hold only a pint or even less, and complete it with such finish and elegance that it would grace an art exhibition. I am not one of those who imagine that hard manual work necessarily produces hard thinkers. Indeed, if that were a necessary consequence, there can be little doubt but that coopers would be in the very front rank of intellectual men. Up to the present time, however, the trade has succeeded better in producing men of strong will and sturdy common-sense, rather than deep thinkers or philosophers. It may be hoped that the spread of elementary education, and the increasing facilities for study and for the attainment of secondary and technical training now being afforded to the working-classes generally, will enable us before long to hit the

[1] The method of payment in the coopers' trade is either piece or time work, according to the class of work performed. The making of new casks is almost entirely done by piecework, and for this the Trade Unions maintain fixed "lists of prices," according to the sizes and qualities of the casks. The repairing of old casks is usually paid by time though sometimes by the piece, and for this the Unions maintain standard weekly hours and rates of wages. The earnings of a pieceworker are usually somewhat higher than those of a timeworker, but there is very little variation in the amounts, in either case, from town to town, practical uniformity for the same kinds of work being the rule.

happy mean, and to produce men in whom the capacity for hard work and hard thinking shall be equally combined.

The maintenance of the fairly good wages and conditions of labour enjoyed by the journeymen coopers is almost entirely due to the fact that organisation in Trade Unions is so old established, and so firmly rooted a principle among them, as to be in effect almost a hereditary habit. It cannot now be definitely ascertained when Trade Unions were first formed by the men in the trade, but there is much evidence of their early origin. I have seen, for instance, the "Articles of Agreement by the Glasgow Journeymen Coopers' Society, for raising a fund for the supply of sick members. Instituted upon the 21st September, 1770."

Already in 1813, too, we learn, from a return to the House of Commons in 1834, that the master and journeymen coopers of London had met together, and agreed upon a list of prices for work. This list was revised at another meeting in 1816. In 1821 the Philanthropic Society of Coopers in London was definitely established, and it has preserved a continuous existence, and taken an active and important part in all general Trade Union movements, since that year. The trial and acquittal of four of its members at the Old Bailey in December, 1821, on a charge of conspiracy, led up to the repeal of the Anti-combination Laws in 1824, and both the masters and journeymen gave evidence before the select committee of the House of Commons, which inquired into the operation of those Laws and recommended their repeal. This evidence is well worth perusal even at the present day, and even in that age of poor educational opportunities, the men did not come worst out of the ordeal. In 1825 a great strike occurred in London owing to the men demanding an increase in prices. It lasted 13 weeks, and ended in a complete victory for the men.

The early history of the London Coopers' Trade Society is fairly typical of that of the societies which were established almost as soon, in almost every other town of importance. In 1854 these local societies in about 20 towns in the United Kingdom combined

together and formed the National Association of Coopers.[1] It existed until 1868, when, in consequence of several great strikes, some internal dissensions were aroused, and the association was dissolved. The local societies remained in existence, however, although without any central organisation, until 1878, when they again combined and formed the "Mutual Association of Coopers,"[2] which still exists and performs many useful functions to the Coopers' Societies throughout the United Kingdom.

The Coopers' Unions, in addition to their work in keeping up the weekly wages, or piecework prices of their members, and regulating the hours of labour, maintain also a close watch over the other conditions of their working life, and very strictly control the methods of entry into the trade. They have maintained intact the old system of apprenticeship in the trade, and, doubtless, it is to this that the excellence of the work still executed is largely due. The existing regulations of apprentices are well worth some further explanation. Every journeyman may take one apprentice, who must, however, be the son of a cooper, and he may take two apprentices if they are his own sons. The master coopers are allowed to take any lad as apprentice whom they think fit, but are limited to no more than 3 apprentices at once, except in cases where there are 2 or more partners in a firm, when they may take no more than 4 apprentices at once. These lads must all serve 7 years at the trade, and must be properly indentured to their employer, whether master or man. Notwithstanding these limits and restrictions, the trade is, however, by no means understocked, and there are always more practical coopers than can be continuously employed.

The Livery Company of Coopers already referred to has done little or nothing for the trade for over a century, and, so far as I

[1] This was a Federal body. Each local society preserved its own independence, but the Federal executive had power to levy them up to 1s. per member per week.

[2] This Association is also a Federation of local societies. Twenty-eight societies, including some 40 towns, and about 6,000 members in the United Kingdom, are now affiliated to it.

am aware, it cares nothing at the present day for the skill of its members so long as they can pay their entrance fees. I should, indeed, be greatly surprised to hear that it contained six members who were able to make any kind of cask whatever. The whole of the credit of maintaining the standard of efficiency in the trade belongs, therefore, to the Coopers' Trade Unions. Certainly, I am sorry to say, none of it can be given to the masters, who, but for the determined opposition of their journeymen, would take an apprentice and instruct him in the art and mystery of drawing a truck, and then expect him to develop into a first-class mechanic. If they found he did not so develop, they would then be the first to complain and deplore the decadence of British skill, and cry aloud for the establishment of Technical Schools, calmly ignoring the fact that the practical part of the trade must be acquired in the workshop, and that if they only did their duty by the lad properly, he would have become a skilled workman. Thus, for instance, one of the recently established Trade Unions has had some trouble about admitting a young man as a member who had been apprenticed under an indenture which contained a clause to the effect that the man he served under "agreed to teach him coopering to the best of his ability." This, however, might have been merely to hoop a cask. No Trade Society could, of course, accept such a clause. If a Trade Union properly performs its functions, and is really supported by its trade, its card of membership should be a certificate of competence as a workman to all who hold it, and if this condition becomes relaxed it must lead to serious difficulties in the trade in the future.

For the present, however, at any rate, the outlook for the trade is very hopeful. In spite of some difficulties and some loss of trade, the craft is still a flourishing one, and the relations between employers and men are fairly satisfactory. A new source of trouble has recently arisen. Two or three attempts have been made of late years to induce the journeymen to work up into casks materials partially prepared for them by machinery. So far, however, the coopers have successfully resented any such encroachments on their trade. The expensive nature of the

plant and machinery necessary, and the cost of its maintenance, combined with the absence of that discrimination which forms so large a part of the cooper's skill, have enabled the journeymen to prevent its advance. Although it might be advantageous to many of the men to work with the machinery, yet they know that this would throw out of employment at least twenty-five per cent. of their fellows, and, under present social conditions, I admire their courage and comradeship in refusing to take any steps which must be followed by such disastrous consequences to their fellow-workmen. Should they ever be compelled to work with partially prepared material, however, it is to be hoped that they will never surrender the condition that all apprentices to the craft shall learn the whole of the trade, and not permit them to be sub-divided into machine-minders and hand-labourers.

In the past the coopers have, through their very effective organisations, helped to get many reforms through Parliament both for themselves and for the workers generally. From 1824, when they took an important part in the repeal of the old Anti-combinations Laws, down to this year, when they joined in the attempt to get a proper Employers Liability Act, the coopers have never been ignorant of the fact that many of the reforms they require can be better obtained by legislation than by any other means. It is true that Parliament made a mistake, which inflicted considerable injury on the trade, when it took the duty off manufactured casks and packs or shooks, as they are sometimes called, but allowed it to remain on the single imported or pipe staves. This completely handicapped the coopers in England for a time, but a deputation from all quarters of the kingdom had the pleasure of convincing the then Chancellor of the Exchequer of the error of his ways. Some of our men, too, regret that the duty was ever taken off timber, as they assert that they have had nothing but "dunnage" wood to work ever since, and it is certain that that reform had its disadvantages as well as its advantages to this trade. There are, however, several things which Parliament might still do with much advantage to our ancient craft. We should like to see the power of giving certificates of compet-

ency to workmen in the trade, conferred, either upon the Trade Unions, or else upon a Gild established for that purpose in all large manufacturing centres. This would not be a difficult task, as there is not at the present time a city or town of any importance in the United Kingdom which does not possess a strong Trade Union of coopers, most of them being federated in the Mutual Association. The value of some such system of certifying the competency of a man at his trade would be very great, and it would do much to preserve and raise the standard of efficiency throughout the whole industrial class. The House of Commons ought to insist, too, on seeing that its resolution in favour of the payment of standard rates of wages, and the observance of fair conditions of labour is properly carried out. This is not done at present so far as the coopers are concerned, for the Admiralty still declines to pay the coopers employed in its dockyards the minimum rates of piecework prices agreed upon between the employers and the Coopers' Society. Moreover, the fair conditions of labour are also infringed in the Admiralty yards by the employment of labourers to do parts of the coopers' work, which ought to be immediately stopped. Finally, too, Parliament should at once raise the minimum age for coopers in the Royal Navy to 21 years, so as to ensure that none but properly apprenticed and qualified workmen are employed in that work.

With these necessary reforms accomplished, and with the continued maintenance and growth in power of their Trade Union organisations, the working coopers will have but little cause to look forward to the future with uneasiness or alarm. Throughout the whole of this century they have maintained, by their own unaided efforts, and often in face of the bitter hostility of their employers and the general public, that high standard of comfort which their forefathers won a hundred or more years ago. They have kept, too, that rigid control over their work and the conditions of their daily toil, by which alone the workman can be securely defended from industrial tyranny and oppression. They constitute a body of sturdy practical workmen, possessed of a keen spirit of independence and a deep sense of the need and value of

unity, and mutual aid to the whole of their class. Whatever difficulties and problems the working classes of this country may be destined to encounter in the future, it can be safely predicted that the coopers will not shrink from their share of the work involved in dealing successfully with these questions. As they have done in the past so they will continue to do in the future, and standing shoulder to shoulder they will seek to advance, first the interests of their own trade, and next the cause of labour generally, and the well-being of the whole of the class to which they belong.

THE ART OF BOOKBINDING.

By Frederick Rogers, President of the Vellum Binders' Trade Society.

To the workman whose days are spent in the production of cheap bindings the title of this lecture may well seem a meaningless phrase. "The Art of Bookbinding indeed!" he will cry with a scornful laugh. Why, what art is there in it? It is a mere thing of mechanism and rapid execution; even the craft of the hand is of little worth when machines can go quicker. You can't be artistic on piecework unless you want to go home without your money, and only here and there can you be so on time-work. People don't want art, they won't pay for it. It is not what is done well, but what is cheap, that is demanded by the public; not what is artistic or what is technically correct, but what will pass without notice, that is asked for by the employer. That there is much truth in this criticism I do not deny; but it is not all true, it is not always and everywhere true of any branch of the trade. And, however much of truth there may be in it, however low the level of bookbinding may be on its under side, the fact still remains that on its best side, by its history and associations, as well as by its own intrinsic merit, it takes rank among the first handicrafts of the world.

Book, "a volume in which we read; a register in which a trader keeps an account of his transactions". In these two sentences matter-of-fact old Samuel Johnson, aiming only at a correct definition of the word "book," described with considerable accuracy, though quite unconsciously, the two divisions that exist in the art of bookbinding. The cause for these two divisions is found in the fact that the book in which we read and the book in which we write, existing as they do for different and contrary purposes, are, from the very beginning of their creation, built up according to different methods, and in entirely different ways.

The "volume in which we read" should be strong, true in all its details, should open freely so that it does not require to be held down by the hand while it is being read; and should be, if only because it is so often our close and constant companion, as beautiful as the conditions of its existence will allow. The "register in which a trader keeps an account of his transactions" is regulated by quite other principles: it exists to be written in, that is the final cause of its creation, and therefore it should be thrown up flat where it is open, so that the pen can be used on any part of the leaf, without let or hindrance. Therefore it is that two sets of principles exist, and that the arts of the bookbinder and account bookbinder, although akin, are not identical. An account book need not be beautiful; it is created for the service of mammon. A book from which we read ought to be; it may exist for a higher service. The account book, however, ought to have, and often does have, as much artistic perfectness, as much technical completeness, as are consistent with the purpose it is created to serve; and above all things and before all things a good account book ought to have strength. The account book needs strength, because among other reasons it has much hard usage to undergo, and because too often when the day is over it is treated much as men treat coals, it is flung into the safe or strong room as a thing of naught. To the craftsman it is, as far as the employer will let it be, the outcome of his art: he has put somewhat of himself into it,—to the clerk it is but the badge of his drudgery. The term "vellum binder" comes from the fact that the larger proportion of account books, and a great many letterpress books too, were at one time bound in vellum. It is otherwise now, though vellum is still an important and essential material in account book work. But the vellum of to-day is not so good as the vellum of a century ago; not much of the vellum of the days of Victoria will wear like that of the days of Queen Bess. It, like most things now-a-days, is produced more quickly, is more brittle, less pliable, altogether of a different texture, to that of the old church books, which sometimes are such splendid monuments of the vellum binder's art.

The art of bookbinding is among the most ancient of all the arts of the world. By the side of it printing is a product of modern days. Even though in this nineteenth century it has become, like so many of the finer elements of life, somewhat degenerate, and in many of its aspects can only be called a handicraft, it ranks among those handicrafts which possess a spiritual side; it links, or may link, labour and art together; in it the craftsman and the artist may join hands; it is as old as books, and books are as old as the civilisation of the world, The oldest form of reading book was the roll: a sheet or sheets of skin or other material covered with written characters and fastened to a roller or two rollers as the case might be, for the purpose of holding it by, and rolling or unrolling it for reading from. It is this kind of book that is so often referred to in the Old Testament by prophets and teachers of the law. The oldest form of memorandum book is undoubtedly the tablets which were used in ancient Greece and Rome. These were thin plates of wood, ivory or metal, with a narrow raised margin around them, giving them an appearance not unlike a tiny slate in a frame. Within this raised margin was a coating of thin wax, which could be melted off each day, and on the wax the owner of the tablet scratched the things he wished to remember with an iron pen, called a stylus. This stylus often had at the end a small blade for the purpose of erasure. There is more than one stylus in the British Museum that in form is strangely like the old metallic pencil that some of us knew about when we were boys; and—there is no new thing beneath the sun—the leaves of the ancient tablets, like those of the modern magazine, were stitched together with wire. The man who fastened together leaves of papyrus, slips of bark, or tablets of the kind here described, was the first bookbinder. There was nothing more than the craft of the hand required for such simple work as this; and probably it was done by slaves, though there was certainly some of the beginnings of art in the ornamentation of the ancient rolls. It was a clumsy method of keeping memoranda, this scratching on wax, for a people so cultured and so practical as those of ancient Greece or

Rome; but it lived well on into the Middle Ages, and the tablet books of the thirteenth and fourteenth centuries that lie about in the museums of the world differ from those of the ancient nations only in being more beautiful, in having come under the influence, in having been touched by the spirit, of mediæval art.

It is in the Middle Ages that bookbinding becomes an art indeed; and yet it is not the art of the binder that gives the beauty to the old gospel books and manuals of the Roman Church. He still had only to protect the leaves of written parchment from damage and destruction, and his methods were practical and utilitarian enough: he sewed them on strips of vellum or other strong material, and bound them together between oaken boards, covering them sometimes with reindeer skin or wild boar's hide, or leaving the boards bare as when the carpenter gave them his final touch. It was the art of the jeweller, the goldsmith, the worker in enamel or precious metals, that was called into play, to build the temples that were to enclose what the devout souls of that time held to be the oracles of God. The binder was a monk, the binding room the scriptorium of the monastery; and the handling of these ponderous volumes could hardly have been light or easy work. John of Trittenheim, Abbot of Spanheim in 1486, in his exhortation to the monks about their besetting sin, idleness, says he has diminished their labour outside the monastery, "lest by working badly you should add to your sins, and have enjoined on you the manual labour of writing and binding books". The wainscot boards, solid and strong though they were, did not always protect the books as the monkish craftsmen hoped they would. The worms that ate through the wood ate into the precious writings too, but the boards were well fitted to bear the sumptuous art work that was built up about the volume. And we shall only understand the meaning and the value of that wonderful work when we realise that what was aimed at by those who directed it was nothing less than the incarnation of the book's idea. Nothing was too costly, too beautiful, to decorate the covers of the sacred legend or the book of prayer. To their devout imaginings, the thoughts that were clothed with spiritual beauty deserved to be

clothed with material beauty too; and those who did the best of that old work did it because it was a labour of love, because they believed that in the doing of it they were working for God Himself. "Send me St. Peter's Epistle in letters of gold, even as a glittering lamp and an illumination for the hearts of the Gentiles," said St. Boniface, the English apostle to Germany, writing to the Abbess Eadburgha. "Rhetoric, religious passion, untrained enthusiasm, nothing more," says the critic of to-day when he reads the words. Be it so. But it is the results of that enthusiasm, when its words were made flesh, when they took practical and material form, that have given to the art of bookbinding a glory and a beauty that is the admiration of all later time.

Some of the methods of modern bookbinding came in with the invention of printing in the fifteenth century. Books became more numerous and less costly, and their bindings became less costly also. The oaken boards began to give way to boards made of sheets of paper, often of manuscript, pasted together, and pressed till they were hard. Many a valuable "find" has come to modern scholars when these old boards have been separated, and the writing on the sheets examined and read. Lighter material and other methods of ornamenting were needed; and the binding of the printed books was done by the printer himself or craftsmen whom he employed; and then from the printer it passed to the stationer; and there is no doubt that the term "stationery binder," which in the provinces is often applied to members of the vellum binding trade, is a term surviving from the time that the craft began to divide itself from its old methods, and become an adjunct of the stationery trade.

Materials for covering increase and vary in the fifteenth and sixteenth centuries. The goldsmith and the jeweller help the binder still, but less often. Velvet, cloth of gold, vellum, calf skin and sheep skin are all finding their way into the craft, as is also the art of blind stamping, and tooling the cover with gold, or, as we should say, gold finishing. The joy there is in beholding a beautiful book is finely expressed by John Skelton, a poet of the sixteenth century.

"With that of the boke lozende were the clasps,
The margin was illumined all with golden railes
And bice empictured with grass-oppes and waspes,
With butterflies and fresh pecockes tailes,
Englozed with flowres and slimy snailes.
Engraved pictures well touched, and quickely
It would have made a man hole that had he been right sickely,
To behold how it was garnished and bound,
Encovered over with gold and tissue fine,
The claspes and bullion were worth a thousand pound,
With balasses and carbuncles the border did shine
With *aurum mosaicum* every other line."

The bookbinder as a person following a distinct craft is heard of now: the celebrated printer Wynkyn de Worde had a binder in his employ, who lived in Shoe Lane, Fleet Street, and of whom he thought enough to leave £20 at his death, a large sum in those days; and in an Act of Henry VIII., passed in the year 1533, we find that foreign competition is affecting the bookbinding trade. Books are being printed and bound abroad and being sent into England in large numbers, and the craftsmen complain that they cannot compete with the foreigner; and so the Act commands: "And furthermore where there be a great number of the king's subjects within the realm which live by the craft and mystery of binding books, and there is a great multitude well expert in the same; yet all this notwithstanding there are divers persons that bring from beyond the sea great plenty of printed books . . . and them sell by retail, whereby many of the king's subjects, having no other faculty wherewith to get their living, be destitute of work, and like to be undone, except some reformation be herein had . . . be it enacted by the authority aforesaid, that no persons resiant or inhabitant within this realm, after the feast of Christmas next coming, shall buy to sell again any printed books, brought from any parts out of the king's abeysiance, ready bound in boards, leather, or parchment, on pain to lose and forfeit for every book bound out of the said king's abeysiance . . . six shillings and eightpence."

In the minutes of the Stationers' Company of the year 1577, we

hear again of the intruding foreigner, and find a resolution passed: "That the bookbinders that be Englishmen and freemen of this city shall have work before strangers and foreigners, so that they, the same freemen that be Englishmen and binders, shall do their work workmanlie, and as well as any other would do it".

In the binding of the Elizabethan period the old beauty and the new mix and combine. Archbishop Parker tried to revive again the glories of mediæval binding; and the queen herself was a patron of the art, and loved beautifully bound books, as did also "God's silly vassal," James I. The gilding of the outsides of the covers is referred to in a play by John Webster, entitled "The Devil's Law Case; or, when Women go to Law the Devil is full of Business," in a passage which reads:—

> "There is in my closet
> A prayer book that is covered
> With gilt vellum;
> Fetch it".

This play was published in 1623, and James I. had added by that time to the collection of royal books which in their capacity as specimens of fine binding are among our national treasures. He died two years later; and with Charles I. and the civil war the art passed under a cloud, and with Puritanism it enters upon another phase of its existence. It is at about the time of Charles,—if a Parliamentary paper of the reign of Queen Anne can be taken as evidence,—that milled boards made from old rope are first invented. The cheap printer is busy; he is cheap and nasty mostly, but he illustrates for us how democratic Puritanism was. His books are for the tradesman, the merchant, the small shopkeeper, the craftsman and the soldier. He no longer prints for the classes, the masses are reading books too. They are religious books most of them, and side by side with the cheap printer there goes naturally enough the cheap binder.

There is no better object lesson to illustrate the change of English thought and feeling before the Reformation and after than may

be obtained by placing a gorgeously bound missal of the beginning of the sixteenth century by the side of a volume of Puritan divinity bound at the close of the seventeenth. They differ as a passage from Dante differs from a speech by Cromwell. A different spirit manifests itself in each. The church book, ablaze with all the beauty that a cultured imagination and refined artistic perceptions can clothe it with, brings us close to that old world of splendid pageant and imposing form, and proclaims to all who can hear, that inward beauty and outward should correspond in all things, that art is the handmaid of religion, and is never employed so worthily as when it is doing her work. The plain brown covering of the Puritan tome, with its solid, strong, honest, but withal commonplace work, speaks with another voice, and says the outward form is nothing, the inward spirit all. There are noble qualities in the work, but it is the work of handicraftsmen, not of artists. It has truth and honesty for its motive and base, but beauty is a thing of naught. It lacks often those little refinements that come of mere technical knowledge, there is a clumsiness in the thing as a whole which marks the labour as of indifferent skill; but in its solidity, its simplicity and its strength, there are all the elements of the Puritan character and the Puritan ideal, and in its mournful hue, as contrasted with the brighter colours of the other volume, one almost seems to hear, and to understand anew the words of the Puritan sonnet, Puritan even though it came from Shakespeare's pen:—

> "Poor soul, the centre of my sinful earth,
> Fool'd by these rebel powers that thee array,
> Why dost thou pine within and suffer dearth,
> Painting thine outward walls so costly gay?"

The virtues of the second Charles were not numerous, but among them must be counted a love for good bookbindings. He never paid for them; still he got them together, and those bound by Samuel Merne, his own bookbinder, and presumably therefore under his own direction, show the merry monarch as a man of refined

taste. Red morocco was evidently his favourite material, but he never overloads it with gold. The royal cipher is there, but of other gold work there is no more than is necessary to make a beautiful book. There are a few volumes in his collection which are exceptions to this rule, notably a prayer book of 1662 which is English binding, and the tooling of which is as elaborate as it is lovely.

Chained books were common objects enough from the time of the Reformation onward, and the chained book implied a solid and heavy binding, the chain usually being fixed to the oaken board: any other material obviously would not hold a chain very strongly. Aggressively Protestant writers have written eloquently about the outrage to freedom of thought and speech that a chained Bible implied. It is sad to have to destroy the sentiments of sincere conviction; but the chain was simply put there to protect the sacred volume from the book thief, who, like the poor, is always with us. What an old author says makes the meaning of the chained book apparent enough: "The thievish disposition of some that enter into libraries to learn no good there, hath made it necessary to secure the innocent books, and even the sacred volumes themselves, with chains—which are better deserved by those persons who have too much learning to be hanged, and too little to be honest."

During the sixteenth and seventeenth centuries, and in the early years of the eighteenth, the finest bindings were done in France and Italy. Great book collectors, like Jean Grolier, treasurer of the Duchy of Milan, and a race of craftsmen-artists without their equals in the world, show that the artistic traditions of the Middle Ages had never been broken through, that the book was always a thing of beauty, and that the craftsman and the artist joined hands in its creation.

The name of John Cosin, Bishop of Durham from 1670 to 1686, should be held in honour by our craft. He was a great patron of binding; he knew the difference between good binding and bad, would have nothing to do with the shoddy article, but did not mind what he paid for good work. He was partial to red letter-

ing pieces, and had some technical knowledge of the way of putting them on, as the following direction to his binder will show: "Where the books are gilded over there must of necessity be a piece of crimson leather set on to relieve the stamp. . . . The impression will be taken the better if Hutchinson shaves the leather thinner with a sharp knife."

To the student of industrial history the eighteenth century is a howling wilderness, and a dreary waste, but the binders are heard of at its beginning, its meridian is marked by the work of the strange genius Roger Payne, and in its last quarter the binders' Trades Unions come into existence. A Parliamentary paper dealing with the "Case of the Bookbinders" was published in the year 1711, and deals with a grievance vitally affecting the trade, that of a tax on millboards. The paper throws much light on the condition of the trade in the early years of the eighteenth century. At the same time was issued a similar paper entitled the "Case of the Printers," who protested against a tax on paper. The printers are very certain that the taxing of binding material is not of serious importance; but are sure also that if their goods are taxed public morals will suffer. "Many hundred master printers," say they, "and journeymen of this city, depend upon the printing of small pamphlets, especially the latter, by which all Britain is supplied with sermons and other tracts of devotion at a cheap rate."

"In Duke's Court, St. Martin's Lane, Mr. Roger Payne, the celebrated bookbinder, whose death will be a subject of lasting regret to the founders of magnificent libraries."—So the *Gentleman's Magazine* for December, 1797, announces the death of a man whose work marked a new departure in English bookbinding The eighteenth century was the period in which most of our great private libraries were formed, and when men of education and leisure took a lively interest in the pleasures of book collecting. Many of them were careful too that their books should be well bound, and the skill and originality of Roger Payne secured him permanent employment from those who could pay him a good price for his work.

Men like Lord Spencer, Mr. Woodhull, the Rev. Mr. Cracherode and Dr. Mosely owe some of their fame to-day to the fact that they could appreciate the genius of this man. For it is genius, the power to see and to create the ideal in his art, that meets us in the work of Roger Payne; and never surely dwelt genius in stranger temple than this poor drunken craftsman gave it for abode. Born at Windsor in the year 1739, he learned his trade at the hands of a Mr. Pote, a bookseller and binder to Eton College. Coming to London, he found a friend and helper in a benevolent bookseller, one Thomas Payne, whose shop at the Mewsgate by Charing Cross was the resort of all the book writers and book lovers of that time. Through the kindness of this namesake of his, Roger Payne was established in business, and among the people who met at the shop by the Mewsgate, he found, no doubt, employment enough. He could do better work than any binder living in England, and his work possessed originality and beauty too. To such a man, with such a connection, fame and competence might be expected to come as a matter of course. He was founding, and for the first time, a purely English style in bookbinding. He owes to the French school, as much as genius ever owes to those who work before it in the same field, suggestion, no more. All else was born of his own instinctive love of the finer elements in his art. His sewing is as good now as when it left his hands a century ago; his backs are flexible, his boards true, and it is only at his joints and strangely coloured end papers that the judicious find reason to grieve. He had no sense of harmony of colour, but his perception of beauty of form was wonderful. He knew the secret that elemental forms combine best; and his tools were of the simplest kind, and few in number. Dots, gouges, simple little circles, a crescent, and one or two flowers made up his whole stock; and any one of them taken by itself would be thought nothing of by the modern finisher. But their marvellous combinations under the old craftsman's hand are the admiration of all who admire good bookbinding in the English-speaking world. The French care little for him, but as an artist he is as great as their greatest of his day. Even though the French school in-

fluenced him at the commencement of his career, when he became a master of his art he stood alone, original and unique.

But, rarely gifted though he was, his life's story was tragic enough. He found many friends, but his enemy was of his own household. The ideal side of the man's character comes out in the excellence and the beauty of his work, into it he puts all that was best in his strange personality. But when that work is done and payment had, it is another man whom we see. The artist has vanished, and it is a will-less, thriftless ne'er-do-well who is in his place, devoted to what he calls, in the language of the Restoration poets, "barley broth". He is even poetical about it, and writes verses on the backs of his bills before he sends them home with his work. The following lines, which he is reputed to have sent home with a book *On the Wines of the Ancients*, have been preserved by oral tradition :—

"Homer, the bard, who sung in highest strains
The festive gift, a goblet for his pains;
Falernian gave Horace, Virgil, fire,
And barley wine my British muse inspire,
Barley wine, first from Egypt's learned shore,
And this the gift to me from Calvert's store".

Another specimen of his verse really appears on one of his bills; it strikes the same note as the previous lines, but is very different from them in other ways :—

"But history gathers
From aged forefathers
That ale's the true liquor of life.
Men lived long in health
And preserved their wealth
Whilst barley broth only was rife".

The glimpse we get of the man's character in these bills shows him an honest craftsman. His contempt for inferior work comes out in such sentences as these : "Bound in the very best manner, sewed with strong silk, every sheet round every band, not false bands". Or, "Sewed in the very best manner with white silk, very

strong, and will open easy, very neat and strong boards". Or, again, "The back covered with russia leather before the outside cover was put on. N.B.—The common practice of bookbinders is to line their books with brown or cartridge paper."[1] "The paper lining splits and parts from the backs, and will not last for time and much reading." Or, "Sewed in the very best and most honest manner on bands outside. . . . Vellum headbands, so as not to break." There is a picture of him at his work, drawn at the instance of his namesake Thomas Payne, in which we see a bent ragged man in a squalid wretched room, bare of furniture, leaning over a press, and clasping a book with both hands. The walls broken, the floor black with the dirt that will accumulate even in the smallest binding room, the whole picture suggesting nothing but grime and gloom. It was under conditions such as these that the finest bookbinder of the eighteenth century lived and worked; and, in spite of his vices, and the levels they dragged his life down to, he made himself famous in his craft; and, as the *Gentleman's Magazine* puts it, "lived without a rival, and died without a successor". Of his death we know nothing. He ended his days in the garret where he worked; and the words, "Roger Payne, male, 26th November," in the register of St. Martin's Church, is the last record we have of a craftsman who, in a commonplace age, loved for their own sakes beauty and sound principles in his work.

All work that men do has its humorous side, and the humours

[1] When will letterpress binders return to the sound methods of Roger Payne, and abolish utterly and for ever paper linings in backs, at least in whole and half bound work? "Never," will be the reply, "it is impossible." I answer, It is nothing of the kind. It only wants some one with pluck enough to make a new departure, and try whether sound principles cannot fit in with the cheaper methods of work. Neither flexibility nor strength can be had from brown paper; and so the general public have been taught to admire the hollow back, or as it is stupidly called "the spring back". The idea of the hollow back is borrowed from account book binding. There it is a sound principle; in a reading book it is an absurdity. The tight back is the only sensible method for books that are not account books.

of bookbinding would fill a volume. The craftsman will find them first in the amateur bookbinder. He is usually young. He learns his trade from reading articles about it in popular manuals for teaching all things quickly and nothing well. He spends much time and energy, and money (if he has got it) in buying materials and tools. He turns his bedroom into a workshop, and decorates the furniture with paste and the hearthrug with glue, to the infinite disgust of the female members of his household. But he is a perfectly harmless personage, and the attitude of the craftsman towards him need not be that of a violent antagonism, but rather a tender pity. He makes far less than he mars. His work is always valuable as a moral object lesson, and it rests peacefully among the lumber of the second-hand bookstall at last usually in the box marked twopence.

Then there is the amateur designer. He is usually middle-aged, of independent means, and without family, and, therefore, with leisure to cultivate his fads; and one of these is a belief that he can create new designs for the art of bookbinding We all know him. We have seen the pleasure that beams from his benevolent face as he brings from among his treasures a strange and wonderful volume, which he assures you with a self-satisfied smile has been done entirely after his own designing. Peace be unto him! He has relieved the binder of an awful responsibility.

Curious and strange have been the materials used for book coverings. There is an edition of the *Pilgrim's Progress*, the boards of which are made of the oaken beams that were taken out of the belfry of Elstow church. Books have been covered in fragments of altar cloths, pieces of bridal dresses, in the skins of witches, murderers, and members of the French aristocracy; and there is a story of an excellent lady who counted among her treasures a copy of the *Whole Duty of Man*, bound in a piece of her first husband's dressing-gown. It would be interesting to know what her second husband thought of that binding! In the ill usage of books food for mirth is often found by the unregenerate mind. It is shocking to hear of a handsomely bound Shakespeare being made into a stand for a plate of hot pea-soup. Hannah

More's story of the country village where there was only one Bible, and that used to prop a flowerpot, causes a feeling as of cold water at the spine; but it does not come near the story of the travelling canvasser who was seeking orders for a newly-published work. Expatiating on its merits to one whom he would fain make a purchaser, he was met with the growl: "It's no use to me, I never read". "But then your family," interposed the indefatigable one. "Haven't got a family, have nothing but a cat." "Well, you'll want something to throw at the cat." He got an order. Vellum binding has its share of mirthful legends; and one of the most famous of these occurred not a hundred miles from South Place, and was in connection with a Government contract. Among those who worked on that contract there was one man whose sole business it was to sprinkle the edges of the books that had to be bound. It is terribly monotonous work, this everlasting beating a brush against a stick, and ought to be given to a binder rather as a punishment for his sins, than a constant task. But the hero of my story was a happy soul, who did not feel the monotony, but took life easily, and possessed among his many virtues an infinite capacity for enjoyment. And it happened on one occasion that he enjoyed himself,—not wisely but too well. And when, in the incidents that followed that day's enjoyment, he was asked by a distinguished and responsible citizen what his trade was, he replied, with a diction that Dr. Pangloss himself could hardly have surpassed, that he was "a book-edge decorator to Her Majesty's Government".

The first Trade Union in the bookbinding trade was formed by the London letterpress binders in the year 1780, and its formation was followed by an industrial battle. The story of that trade union fight, and of many another battle in our trade, has been written by a skilled and sympathetic pen in the pages of the *British Bookmaker*. To those who know something of the life described that story is as interesting as the pages of a romance. It is a little world to which it introduces us, this world of the workshop as it was a hundred years ago. The air is thick with the dust of small detail; men's ideas are pinched and low;

master and workman alike are narrow and bitter by turns in the fights they wage for what each thinks his right. But heroism is there in the struggle of the craftsman against unjust laws, that meet him and trip him at every upward step he takes; self-sacrifice is there in his patient endurance for the sake of a principle that will bring him little of worldly good; tragedy is there, dark and hideous, in the working of those laws which make criminals of men who only seek to humanise somewhat their dreary drudging lives, whose great offence is, in the words of the indictment, that they did unlawfully conspire, combine, confederate, and agree together, to take from, lessen and diminish one hour in each day's work. All those elements, which, seen in historical perspective, give dignity and beauty to the storm and struggle of social conflict, are there to round off and make complete this pathetic drama of commonplace everyday life.

The formation of the societies—there seems always to have been a trinity of societies among our letterpress friends—took place in the years 1780-83 and '85; one being called the "Friends," the other the "Brothers,' the other the "City Brothers". The wages at that time seem to have been seventeen shillings a week for binders, and twenty-one shillings for finishers; the hours twelve and a half per day; and the first strike, like the last, was for a reduction of hours. The men and the masters were in closer contact then than they are now. There is an intermingling of names among them that often suggests relationships between the employer and the man to be employed: and indeed we know relationships often existed. And there are changes of fortune, such as the trade society man of one year becoming the employer of the next; his society principles becoming small by degrees and beautifully less as his business grew larger. But the men who fought for the hours' reduction in 1786, saving up their money for three years beforehand, were very fine representatives of their class. The law and public opinion alike were against them, their organisation was illegal, and had no protection from fraud or dishonesty, but they were in deadly earnest; and in March, 1786, the battle for the hours began. The first to give it was His Majesty

King George III. He only kept one binder, Mr. John Polwarth, and he was spared the crime of striking the king. But the master bookbinders did not give way: the law was on their side, and the booksellers supported the bookbinders in declaring that the demands of the journeymen were unreasonable, and their combination without any justification at all; and what began as a strike became a lock-out followed by a prosecution. On the 25th of April, 1786, twenty-four bookbinders were indicted at Clerkenwell Sessions House for unlawful conspiracy. The indictment was long; but the sum and substance of it is found in the charge that they "did unlawfully conspire, combine, and agree together to take from, lessen, and diminish one hour in each day's work; . . . and afterwards did, on the same day, unlawfully assemble and meet together, and form themselves into an unlawful society to support each other in such unlawful purpose".

They were duly committed for trial; and owing to the skill and energy of their counsel, Mr. Erskine, the trial was removed to the Court of King's Bench, where it took place in Feb., 1787, some ten months after their arrest. Mr. Erskine claimed that the men had a right to combine, and could legally do so if they did it in a proper manner. No such right, however, was recognised by the law in those days; but the trial ended in the discharge of eighteen out of the twenty-four men, the other six were ordered to go back to their work, and come up next term for sentence, which sentence, they were informed, would be severe. The six were: Thomas Armstrong, William Craig, William Lilbourne, William Wood, Thomas Fairbourne, and Alexander Hogg.

They refused to return. To do so, they held, would be to give up all they had fought for; and this they could not do. By the advice of their counsel their society was broken up, but return to their employers on the old terms they would not. On Tuesday, May 8, 1787, they came up to receive sentence. One of their number was discharged on the ground of insufficient evidence; the other five, all of them finishers, were sentenced to two years imprisonment in Newgate, on the State side. There, the

imprisonment was not so severe as on the felons' side. But it *was* imprisonment; and one of the five, William Wood, being of a more sensitive nature than his companions, felt it bitterly enough. Deprived of the society of the wife he loved, he fretted and pined in sad solitude, until gaol fever brought his imprisonment to an end before one of the two years had passed away.

There is a strangely dramatic episode in connection with his funeral, which will appropriately finish his story. One of the foremost of the men's opponents was James Mathews, who is described as "a very respectable bookseller and vendor of medicines at No. 18 Strand". He was also a lay preacher in a chapel of his own in Holborn, and was the father of Charles Mathews, the celebrated comedian. Mrs. Mathews was William Wood's aunt. It does not appear that she was in any way responsible for the spite with which her husband treated her nephew; but when poor Wood's body was brought from Newgate to its last resting place in the burial ground of Whitfield's Tabernacle, Tottenham Court Road, the bearers passed up the Strand, set the body down opposite the house of Mathews, and relieved their feelings by a deep and mournful groan. It was answered by a cry from within the house; and Mrs. Mathews, who had surveyed the scene from the dining-room window, fell senseless to the ground, as the cortège went on its way.

Through the kind offices of Sir Matthew Bloxham, one of the sheriffs of London, the other four prisoners were released soon after their comrade's death, the hour fought for was conceded; and so ended the first strike in the bookbinding trade.

The Vellum Binders' Society was founded on the 28th of March, 1823. The title has since been altered to Vellum Account Book Binders' Society, to suit the conditions of modern trade, the words (Account Book) being put in brackets; but the term "Vellum Binder" described with sufficient accuracy the man who bound account books in the days of George IV. The mysteries of the modern binding shop were unknown in those primitive times. But the grinding employer and the bullying foreman existed

then as they exist now; and the old dark phantom, "slackness of work," hovered over the workman's life and filled it with bodings of ill, and drew the men together for mutual protection, and caused the society to be formed. They were a simple straightforward group of men, who met together at the Savoy Palace in the Strand—not the royal residence, but the public-house—to draw up the first rules and call the new society into being. They had no large ideas or far-reaching schemes to develop: it was dangerous for a workman to have any ideas at all seventy years ago, but they had a very clear perception of what they meant to do. And they meant first of all to make provision for out of work, then to uphold the quality and dignity of their handicraft, and to protect themselves from the encroachments of unjust employers. The first meeting place of the society after it was duly formed was the "house of Mr. Orlando Gardner, Nag's Head, Aldersgate Street". The Scribes and the Pharisees take up the trade unionist now, but he consorted with publicans and sinners then. The subscription was ninepence a fortnight, and out of that the member received a ticket for one pint of porter. The influence of Mr. Orlando Gardner and of the Combination Acts may possibly be visible here. Until these Acts were repealed all meetings of workmen were illegal unless a "friendly glass" was drunk.

There are certain rules in the book of 1823 which show that it is the Trade Union, not the employer, who is upholding the dignity and integrity of the handicraft by which he lives; that it is the employer, not the workmen, who is responsible for the low standard of labour which obtains now. One rule is: "That from and after the 25th day of March, 1824, no persons can or shall be admitted a member of this society who has not served a regular apprenticeship of, or the full term of, seven years as a vellum binder, machine ruler, or gilder (except those who have been in the business seven years previous to that date)".

Other rules make it imperative that a man shall be of good character or he is not allowed to join, and all the rules affirm directly or indirectly that before a man has any right to call himself a member of a trade he ought to know that trade thoroughly.

That if he belongs to a trade society he ought to see to it that his society contains skilled men, and honest men and good citizens too. Side by side with these written laws there was always the unwritten law, that if you found a fellow-workman who was deficient in the knowledge of his craft, it was your duty, if he were a society man, to teach him where he was ignorant, and set him right where he was wrong; and so I claim for our society, and for Trade Unions generally, that in advocating these sound principles they are upholding all that is good in their crafts. It is curious, too, that the principles they advocate are those of the ancient Church, that the Saxon Archbishop Dunstan laid down the same law as that laid down by the trade unionists, when he framed his rules to govern the priest-artisans of the guilds he formed a thousand years ago.[2]

The first minute book now existing bears the date of August 30, 1830, and December 11, 1838, on its last page. It is full of quaint, odd incidents which illustrate the simple but somewhat unbusiness-like honesty of the men who built the society up. It deals with dinners, out-of-work allowances, the best method of banking what capital there was, of votes of confidence and no confidence in its chairmen and presidents. The "landlord" seems to have been regarded as a kind of honorary member of the society. Its funds when not in the bank rested in his care. Then comes a minute that only shillings shall be left out of the savings bank; half-crowns, crowns—there is no mention of sovereigns, but, I suppose, they had one now and then—being always placed in the savings bank after the meeting. Commonplace records, all of them, but suggesting straightforward dealing. No

[2] The following passage from the Canons of Archbishop Dunstan is to be found in Dean Hook's *Lives of the Archbishops of Canterbury*, vol. i., page 417. It undoubtedly contains the unwritten law of the Trade Union to which I refer. Its date is probably about A.D. 979:—

"And that every priest do moreover teach manual arts with diligence. And that no learned priest reproach him that is half learned, but mend him if he know how. And that no noble born priest despise one of less noble birth. If it be rightly considered, all men are of one origin."

defalcations, no missing account books, no muddled accounts, even though often the officials are men with no pretence to a knowledge of business methods. The out-of-work allowance in the early years of the society is three-and-sixpence a week, this sum increasing as the funds increase. There is no record of any important dispute in those early years; in fact, the thing that bulks most largely is the annual dinner and ball. And in reading the rules and regulations for this solemn function, it is easy to see how the morals of the conventicle influenced the Trade Union movement. There is something of the stern uprightness of Puritanism, its knowledge of the weaknesses of human nature, as well as its narrowness and strait-laced methods of thought. They have their ideals outside the region of the Trade Union, these craftsmen, and they try to make them influence their everyday lives.

In 1839 the vellum binders were able to make two loans of ten pounds each to the Bookbinders' Society, that society being then in difficulty The minutes show that the loans were made with much cordiality; but the term "Bookbinders' Society" does not show which of the letterpress societies it was to which the money was lent. There is nothing to indicate the state of the funds in that year; but in 1841, which is two years later, there are sixty-two members, and £126 in the funds, the out-of-work pay for that year being under £14. The debt of the bookbinders is liquidated in 1847, and there is the usual dinner. Things go on with a monotonous regularity for a number of years. The society increases in membership, helps other societies who need it with gifts and loans, has its own little squabbles and snarls; and then, on the 31st of December, 1850, which is quarterly night, an incident occurs which reveals an infamous system of blackmail which was levied by foremen on workmen who were weak enough to endure it. A foreman to a firm in Long Acre engages workmen, and promises them constant situations if they will pay him a sum of ten pounds in weekly instalments; and for the sake of constant work at thirty shillings per week, which was the wage then, men were found who would plod and pinch and save

to keep up this system. It is apparently a non-unionist who reveals this to the society, it is the society who kills it so far as that can be killed that flourishes in secrecy and has its roots in darkness. Such episodes are common in past industrial history, and show the morality of business in a curious light.

After the year 1850 the Benevolent Fund comes into existence; there is little that is exciting, little that makes history in the society's records; but there is still the struggle, growing harder and harder every year, to keep up the standard of the craft, to let no man join who does not know his trade, who cannot prove he is a good workman; and the trade is increasing, and the workshops are growing larger, and the half-skilled workman is being created, and the Government contracts appear upon the scene.

The influence of Government work upon the vellum binding trade has been rather the influence of bulk than of quality. It has as a whole only been fairly good, the work done for many large banking houses and business firms has been better in every way than that done for Her Majesty's Stationery Office. But the great point about Government work is that it comes in large quantities; there is plenty of it, and the money is all right. It has always dominated the London trade, and has always been eagerly sought after by London employers.

In the contract shops division of labour became almost a fin art. It was the doctrine preached by all economists then. Bu looking at the results as they are manifested in the industri world of to-day, I say, without hesitation, that a doctrine m fatal to artistic excellence or technical skill, more dangerous good workmanship, or more demoralising in its influence labour, has never been spoken in England since her indus system began.[8] Speed in production it may produce, cheapn

[8] Whatever qualities there may have been in the economic doctr vigorously expounded by the older economists, we have got to the of them now in most of the skilled handicrafts, and it is time we sidered our position. Divided labour is the cause of that low star work which obtains so largely. We have trained men on it, and a race of handicraftsmen who have never been in touch with t

may create; but efficiency in workmanship never. From it, as from some deadly upas tree, has grown the unskilled workman, the man who is for ever a child at his calling, the inferior work which we bewail, but the causes of which we are too blind to see; the half-starved labourer and the millionaire employer are alike its fruit. The struggle for a Trade Union rate of wage in Government contracts and other public work is a protest against it, and against the sweating to which it has given rise. It serves one purpose, and one alone: the modern desire for rapid production; and to do this it lowers the status of the workman, and floods the labour market with those who, through no fault of their own, only know one or two elements of the trade which they profess, and so they are to be got cheap. But in the fierce competition which has transformed English commercial life into a social hell, one aim of the employer of labour is to make profits,—honestly if he can, but to make profits. And what more easy than to take your cheap workman and put him on to well-paid work? He will do it badly, but it will pass in the rush and hurry of business life. And how it will help you with an awkward estimate to base it on a wage of thirty-six shillings a

elements in their craft, and are getting to believe that these elements do not exist. This is true, not of bookbinding alone, but of all handicrafts alike. And the British public, with its usual density, blames the workman, and employers read papers at meetings of themselves bewailing the decadence of British labour, and the foreign workman bogey is trotted out, and causes for the evils deplored sought everywhere but where they may most readily be found. Technical education is the most loudly proclaimed remedy, and technical education is good so far as it goes, and those who are working for it are actuated by the best motives. But all the same it is worked in the interests of the employer, and the net result of its labours hitherto has simply been to increase the number of amateurs in many trades. The remedy lies with the Trade Unions themselves, and if they will not take it the evils will not be remedied. They must go back so far as they can to their earlier standards. They must fight for the quality of their work as well as for its hours and its pay. They must revive the apprentice system again. Even for the most artistic of handicrafts, the workshop properly organised is the best training school. But it must be organised by the craftsmen themselves, it cannot be done for them.

week, and work it out on a wage of twenty-five! Your business credit will rise high in the City, even though you are acting upon principles that are infamous.

It is the office of the Trade Unions to check this reckless gambling in which the counters are human misery and human need, to say to those who take no thought for their fellows, you and yours are a danger and an evil to the commonweal, and it is our business to check you if we can. But how? That is the question that rises to a thousand lips to-day, as the vision of our industrial system shapes itself before their eyes. The Trade Unions are doing worthy work in the industrial war, and in that work the unions connected with the ancient art-handicraft of bookbinding take no second place. The eight hours fight of 1892 is and will ever remain an honourable episode in Trade Union history. By the agitation of the Vellum Binders' Society the Trade Union clause[4] appears now in the Stationery Office contracts for the first time; and it will be the business of that society to see that no breach of that contract takes place. But is it always to be war? Must it always be said of the workers, as it was said of those who worked on the walls of the ancient city, "They which builded on the wall, and they that bare burdens, with those that are laded, every one with one of his hands wrought in the work, and with the other hand held a weapon"?

Not always surely, but for a time it must. The desire for cheapness, and the great mass of unskilled labour in the market, fight against the trade unionist ideal of the living wage. Yes! the living wage that is proclaimed from the pulpits of the churches now is only the old Trade Union doctrine of a minimum wage, coming back to us in another form. The unions have

[4] The following are the Trade Union clauses in the contracts for Stationery Office work. It is but a small mercy that no preference shall be given between unionists and non-unionists; but if it is not adhered to breach of contract is the result, and certainly it prevents the wholesale boycotting of unionism that has been adopted in some firms who have done Government work.

"SUB-LETTING.

"The Contractor shall not under-let any work to be done under this

always maintained that there ought to be an irreducible minimum in the wages of every trade, such minimum to be fixed by mutual agreement, below which men should not go, because to go below it is to fall beneath the level of the man, and go back to serfdom once more.

The warfare will not be ended until that principle becomes part of our social life, and out of that warfare the unions will learn that their logical development is to become producing organisations themselves. If handicrafts can be controlled, directed, and princely fortunes made out of them by men who do not know them practically, but who do know the methods of business life, and we know well enough they can, then they can be controlled and directed in the interests of those who live by them, when they are sufficiently awake to those interests, sufficiently above the smaller vices of our industrial life to combine together for their own purposes, and for the production as well as the protection of their own means of life. Socialists are teaching us that the functions of the State can be enlarged, that, in the words of William Pitt, Government is omnipotent to

Contract or assign the Contract to any other person, without the written consent of the Controller; and shall undertake that in the engagement and employment of workmen and others required for the execution of any work ordered under the Contract, no preference shall be given between unionists and non-unionists.

"N.B.—Attention is directed to the following resolution passed by the House of Commons on the 13th of February, 1891, and renewed on the 21st of March, 1893, to the spirit and intention of which all those who may be entrusted with Contracts for the Stationery Office are expected to conform. The Controller will be compelled to consider the question of removing the names of any firms who may fail to comply with the spirit of the resolution from the list of those allowed to undertake work for the department.

"Resolved: that, in the opinion of this House, it is the duty of the Government in all Government Contracts to make provision against the evils of sweating disclosed before the Sweating Committee, to insert such conditions as may prevent abuses arising from sub-letting, and to make every effort to ensure the payment of such wages as are generally accepted as current in each trade for competent workmen."

protect. But they make the common mistake of all enthusiasts, when they say there is one remedy for all social diseases, and that remedy is theirs. There must be many remedies, since there are many causes. We shall enlarge the functions of the State, and control, so far as Government can control, the power of the capitalist over the labourer more and more. But there must be an independent life within the State to prevent Government becoming tyranny, and the Trade Unions will be chief among those who shall call that independent life into being. In that wise conservatism which causes them to keep up the standard of their labour, in their feeling that it is better for the many to have the means of life than for the few to be millionaires, that the elevation of the race is better than the creation of giants, are the safeguards that will give solidity and stability to social life. But to realise these ideals they must grapple with the methods of the business world themselves; and while on the one hand they aim to control the capitalist by legislation, on the other they must by co-operation seek to supersede him and direct the means of employment for their own use and benefit.

THE AGRICULTURAL LABOURER.

By Frederick Verinder, General Secretary of the English Land Restoration League.

THERE is one fact—too striking to be overlooked, too serious to be ignored—which meets us at the very outset of any enquiry into the condition of the agricultural industry in England. The agricultural labourer is engaged in an industry which is at once the most ancient and the most fundamentally important of all industries. Yet, while the total population, and the total working population of this country, have been steadily increasing, the numbers of those who are engaged in agriculture have for more than a generation past shown a large, steady, and progressive diminution. The census of 1861 brought to light the fact that three counties [1]—agricultural counties—had decreased in population during the previous decade. By 1871 the decrease had extended to eight counties; in 1881 fourteen counties had decreased, although the normal rate of increase in the rural districts was, for the ten years, about 17 per cent; and fourteen counties—although not the same fourteen—again showed a falling off in 1891. All these are counties in which agriculture is the occupation of the great majority of the inhabitants. The detailed returns of the last census are not yet available. But from the figures of the census of 1881, Dr. Alfred Russell Wallace [2] has arrived at the appalling conclusion that no less than *two millions* of the rural population (including those directly engaged in farm work, or in dependent and related trades, with their wives and children) left their native villages in the ten years ended in 1881, and were added to the

[1] Cambridge, Huntingdonshire, and Norfolk.

[2] "Bad Times: An Essay on the Present Depression of Trade." (Macmillan, 1885.)

already over-grown population in the mining, manufacturing, and commercial centres. Nor does the census of 1891 give us any reason to hope that this process of rural depopulation is at an end. Even where a county is, on the whole, increasing in population, there is often a loss in the agricultural parts of it. Thus, taking only the counties with which my own work during the past two years has brought me into special contact, *Berkshire* increased in population by 9·2 in 1881-91, but more than one half of the increase was in Reading, and thirteen sub-districts, out of the thirty into which the county is divided, decreased. *Cambridgeshire* has only increased by 1·7; only three sub-districts show a normal increase, and even the small towns are being overtaken by the dry-rot which has been destroying the villages. *Herefordshire* has decreased 4·3 per cent. *Hertfordshire*, with an increase of 8·4 per cent., is decreasing in eight of its twenty-eight sub-districts. *Norfolk* shows a total increase of 10,857 (equal to 2·3 per cent.), but Norwich has itself added 13,000 to its numbers, leaving a dead loss on the rest of the county. In fact, out of fifty-nine sub-districts, thirty-eight are actually decreasing, and seventeen are losing at least a part of their natural increase. In seventeen out of the thirty-nine sub-districts of *Warwickshire* the population decreases; and the total increase on the whole county (9·2 per cent.) is fully accounted for in the growth of four of its urban districts. *Wiltshire* has a virtually stationary population, having increased only by 2·3 per cent. in ten years, and, while Swindon is growing rapidly, twenty-seven sub-districts (out of thirty-seven) are being depopulated.

It is an undeniable fact that, both absolutely [1] and relatively,[2]

[1] *Thousands and Decimals of Thousands* (*England and Wales*).

	1851	1861	1871	1881
Farmers and their relatives . .	371·7	357·7	342·9	318·5
Agricultural labourers and shepherds .	1253·8	1188·9	980·1	870·8
Nurserymen, gardeners, etc. . .	85·9	91·3	112·7	83·4
Drainage and machinery attendance .	(*no return*)	3·2	3·5	6·0
Breeding and dealing (horses and cattle)	48·2	59·1	64·7	62·3
	1759·6	1700·2	1503·9	1341·0

[2] *Percentage* of population engaged in or supported by agriculture in England and Wales: in 1851, 23·7; in 1861, 20·9; in 1871, 16·5; in 1881, 13·2.

the agricultural population is, and has for a long time, been diminishing over practically the whole agricultural area of the United Kingdom. And this fact becomes even more serious when we consider the character, as well as the extent, of the migration from the rural districts. It is unnecessary to quote a long string of authorities for facts which, unhappily, come within the daily experience of every one of us. I will only appeal to the testimony of Dr. Ogle, the eminent statistician. "Speaking statistically," his only business being to ascertain what the exact facts were, he is constrained to tell us of "the continuous migration of the most energetic and vigorous members of the rural districts," to describe "the migrants, taken generally, and in bulk," as "the cream of the rural population," and to complain that "the most stalwart of the natives of the country are despatched annually to the towns and manufacturing districts and swallowed up by them as by another Minotaur." [1]

I have been able thus briefly to touch upon the question of rural depopulation because, unhappily, there is no dispute as to the facts or as to the gravity of the social problem which arises out of them. It is far more important, now that the depletion of the villages has become a commonplace with politicians of every shade of opinion, to inquire into its causes, than to pile up arrays of figures to prove its extent. I propose to direct your attention entirely to English counties—though Scotland and especially Ireland have suffered in the same way and even to a greater degree—and chiefly to those counties in the South, West, East and Midlands, of which my work during the past few years has enabled me to obtain a fairly complete knowledge. During the last three summers the "Red Vans" of the English Land Restoration League have been travelling from village to village in certain counties. The lecturers, who travel in them, have been engaged in organising the labourers into local unions, and making careful inquiry into the conditions under which the labourers live and move and have their being. Over 1000 of the daily reports of the lecturers, each dealing with a separate village, have passed

1 Journal of the Royal Statistical Society, June, 1889, pp. 212-232.

through my hands to be studied and summarised and collated, whenever possible, with independent sources of information.[1]

The result of a careful study of the facts thus brought to light is to show that the *low wages and irregular employment* of the agricultural labourer are the chief causes of the depopulation of the rural districts. In Suffolk (1891); in Berkshire, North Herefordshire, Cambridgeshire and Somerset (1892); and in Berkshire, Wiltshire, Norfolk and Hertfordshire (1893), the wages of ordinary day labourers were found to vary from 10s. or 11s. to 11s. or 12s. a week, sometimes, but not nearly always, with a free cottage. From Warwickshire weekly wages of 13s., 14s., and 15s. were frequently reported; often the pay is lower, sometimes higher; but cottages are considerably dearer, and the net earnings after paying rent are not greatly higher than in the southern counties, considering the nearness to Birmingham and the Midland coal fields. For these wages the labourer has to work ten or twelve hours a day for six days a week. Horsemen, cowmen, shepherds, and carters usually get 1s. a week more than ordinary daymen, but for this they have to work earlier and later every day, and to look after the animals on Sunday. Much is made by some people of the extra earnings of the labourer at harvest-time. So far as my information goes, the earnings of the labourer during hay and wheat harvest have, of late years, averaged about £6 or £7, but last autumn they fell below the average by some 15s. or 20s., the harvest being short and scanty. The men are paid in various ways; by the acre, by overtime in addition to their ordinary wages, by contract for the whole harvest, by double their ordinary pay; and upon the money they receive, representing, as it usually does, excessively long hours of abnormally hard toil, they mostly depend for the rent of their cottages, their annual supply of clothes, and the meeting of "contingencies," of which the absence of employment in winter is one

[1] For fuller details than I am able to give in a short lecture, the "Red Van Reports" (English Land Restoration League: 8 Duke Street, Adelphi, London, W.C.: one penny) should be consulted; also the "Red Van Notes" in the *Weekly Times and Echo*, May-September, 1893.

of the most serious. Many families this last harvest made only enough to pay the farmer their rent, and, when the accounts were squared, had no money to take at all, and many strapping young fellows had no harvest, and consequently no fallback for the winter. For in the winter almost everywhere, except where the labourers' unions have been able to keep them up to summer level, wages are lower by at least 1s. a week, and work is far more irregular than in the summer months. In some districts it is an established custom to put down the wages on a certain date after Michaelmas and to restore the docked shilling about Lady Day. In the winter, too, the meaning of the term "day" labourers becomes apparent. The wages, which I have quoted at so much *per week*, are more commonly and more accurately stated by the labourers at so much—1s. 8d., 1s. 10d., 2s., and so on—*per day*. They are paid usually only for the days they are actually at work, and in winter they are so often "rained off," or kept from work by frost or snow, that they frequently place their average earnings during the winter season at something like three days a week, and this at a time when the need for extra coal, food, clothing and doctoring is at its greatest, and the pay for every day's work at its least. The agricultural labourer enjoys in winter all the irregularity of work which drove the dockers of the Port of London into open revolt, without the consolation of receiving the "docker's tanner" for the hours during which he is lucky enough to find employment.

There are not wanting signs that the irregularity of employment is a growing evil in the rural districts. As early as the middle of July last the daily reports of the Red Van lecturers began to mention the presence of "unemployed" in the villages, and a month or two later reports came to hand daily of young fellows who "had no harvest" and were walking about the lanes in enforced idleness during what should have been the busiest time of the year. And in Berkshire, the winter of 1893-4 has seen an organised "unemployed agitation" among the labourers, and in the streets of Abingdon and Wantage the scenes of Tower Hill and Trafalgar Square have been repeated on a smaller scale,

though perhaps with greater result, for the Labourers' Union was able to call attention to the needs of its unemployed members in such a way as to secure work from the Guardians, or otherwise, for nearly the whole of them.

I shall probably be reminded that these statements do not at all agree with the optimistic reports about the agricultural labourers lately put before the Labour Commission and the public by certain labour sub-commissioners. Perhaps it would be sufficient to say that wherever the Red Van lecturers and the sub-commissioners are at variance, such enquiries as I have been able to make show that the lecturers are right and the commissioners wrong; and to add that a conference of delegates from several labourers' unions in October last, unanimously "protested against the general tone of the sub-commissioners' reports as being far more favourable than the facts warrant, and asked the public to withhold its judgment until an opportunity be afforded of taking statements from the labourers themselves." But, fortunately, independent testimony as to the wages actually paid to labourers is forthcoming from quite unimpeachable sources. The Guardians of the Buntingford and Royston Unions are hardly likely to understate the wages they pay their labourers. A little while ago they protested against the Hertfordshire County Council for paying their roadmen wages "exceeding the wages paid to the agricultural labourers in this district." The "excessive" wages paid by the Council amounted to no more than 13s. a week—a net average income which included, of course, none of the harvest and other "extras" with which the field worker is so often credited. We have it therefore on the best local authority that the wages of farm labourers in these districts of Hertfordshire average something *less* than 13s. a week. The Maidstone Guardians a few weeks ago cut down their roadmen's wages from 2s. 4d. to 2s. a day on exactly similar grounds. And we may, I think, accept as accurate the statement made by the Abingdon Guardians, as a reason for offering 1s. 6d. a day to the unemployed, that the local farmers were paying their men no more. Facts like these make it less difficult to believe, what is actually the fact, that some of the Wiltshire labourers

were last summer earning only 1s. 6d. a day, and that in some cases, when the fortnightly payment fell due, 3s. was deducted from the 18s. earned to pay the rent of the cottage in which the worker and his family had to "live" on the balance of 7s. 6d. a week!

It is not surprising that under these circumstances the wives and daughters of the agricultural labourers are so often compelled to go out to work in the fields, or to toil for the "sweater" at home. From every county come reports of women working in the fields for wages of from 8d. or 9d. to 1s. 2d. a day; sometimes varied by a turn at stone-picking, paid for at 6d. a load. But it certainly comes as a startling surprise that some of the very worst features of the "sweating" system should have found a foothold in the English village. I venture to quote a summary, which I have just made for another purpose, of some of the reports of the Red Van lecturers on this point.

"In villages between Colchester and Ipswich, women are employed by certain London firms to 'finish' trousers and other garments. The price which the women get for 'finishing,"—*i.e.* for stitching linings into trousers, putting on numerous buttons, pressing and finishing all buttonholes, and fixing six tackings—is, in the case of corduroy and moleskin trousers, *twopence a pair.* Buttons are supplied, but the worker has to spend threepence for thread on every dozen pairs of trousers. For tweed and other materials of a comparatively thin sort only *five farthings* a pair are paid. In some cases investigated by the lecturer, the earnings of women at this work averaged *only one penny an hour.* A firm at Ipswich sends out linen and flannel trousers (for tennis, boating, etc.), to be made throughout—that is, bundles of a dozen 'shapes' are supplied, and for putting these together with a sewing machine, making and fixing pockets, putting on eleven buttons, ironing and finishing, the worker gets *sixpence a pair.* Boys' knickerbockers are also made out of materials supplied for *twopence a pair.*

"In villages around Abingdon (Berkshire) a good deal of 'slop' work is done by women. They are paid 2¼d. or 3½d. per pair for

finishing trousers, for which they have to find their own cotton and thread. They have also to deliver the goods themselves, or to pay their carriage to Abingdon.

"The women of Hertfordshire and Bedfordshire are largely engaged in another sorely-sweated industry—the making of straw-plait. The work is paid for by the score yards, at from 1½d. or 2d. for four-straw 'rustic,' to 5d., or for the most difficult kinds, such as 16-straw brilliant, 6d. or 7d. per score. In some cases the straw seems to be found by the dealer; generally the worker has to pay for it. Thus, when the Van visited Great Offley, women were there making an 11-straw plait in two colours at 5d. per score, from which about 2d. must be deducted for the straw. A woman whom the lecturer interviewed at Hemel Hempstead was making '7-straw split.' She had to provide herself with a 'mill' costing half-a-crown, and a 'machine' (4d.) for splitting the straws. A bundle of white straws cost 5d., and one of blue straws 3d., which *must* be bought from the dealer to whom the plait is sold. The straws will work up, if good, into about five score of plait. If the plait is exceptionally good, the price paid is 4d. per score, but the price is liable to arbitrary reduction if the dealer is not satisfied. The five score would, therefore, not bring more than 1s. 8d., from which 8d. must be deducted for the cost of the straw. 'If I commence about nine in the morning and leave off at nine at night,' said the woman, 'doing some housework between whiles, I can do 25 yards, which will bring me in 'clear' about *threepence*. It is poor enough pay, but as I have the children to look after I can do nothing else.' Where this sort of work is largely done, the homes of the labourers are grievously neglected, and intemperance is said to be prevalent. There is little doubt that the dealers form a 'ring,' in whose hands the poor workers are absolutely helpless. When the 'Red Van' visited the Tring Plait Market on September 8th, the dealers, taking advantage of the fact that harvest was nearly over, and that many men, whose wives were plaiters, were out of work, were reducing the already starvation prices by a half-penny or more per score yards!

"The hat-making appears to be but little better. The women

who make men's 'boaters,' for instance, are paid by the 'score' at 2½d. or 3d. As a 'boater' will take about three-quarters of a score of plait, the nett price for making, after paying for thread, is about three-halfpence per hat."

I have spoken of the uncertainty and irregularity of the day labourers' employment as one of the chief evils against which he has to contend. But there is, at least in some parts of the country, another class of workers, who purchase a sort of fixity of tenure by the sacrifice of their most elementary rights. Our attention was first directed to this question of "hired servants" by certain agreements sent up from East Wilts by the lecturer in charge of one of the "Red Vans." A blank printed form is used for carters, cowmen, and shepherds, the amount of the wages and of the bonus which may be earned on certain conditions, and certain details as to work and hours and fines, being filled in in writing. These agreements constitute a hiring for a year, and generally run from Michaelmas to Michaelmas. The hiring is, therefore, effected at a time when wages are falling, and when the period of uncertain employment is near at hand.

One such agreement which I possess is certainly a remarkable document. It was entered into by a Wiltshire lad some four years ago (Michaelmas, 1889) with Mr. W. B. Gauntlett, a large farmer at Collingbourne, Wilts. The "servant" agrees to serve his "master to the best of his ability, more particularly in the capacity of *Cowman*, but also in any work that may be required of him within his power when not employed in the particular service for which he is hired, and to work and lodge, when required, on any of the farms in the occupation of the MASTER.

"The SERVANT further agrees to be always at his work *at all times required by the Master or his Agent, and to milk not less than ten cows at a milking, and more if required. To be cleanly, quiet, and quick in milking, not to ill-treat the cattle, or to use profane or indecent language.*"[1]

[1] The words in italics are added to the printed form in writing.

That is to say, the lad is taken on to do any kind of work to which he may be put,—including the full work of a cowman—for just any number of hours during which his master may choose to keep him at it. And he is to do all this for an average wage of seven shillings and sixpence a week, with a chance of earning a bonus equal to another eightpence a week if he does it all to the "entire satisfaction" of his employer. For "in return for the above services the Master agrees to pay the servant *Seven Shillings per week to Old Lady Day next, thence to Old Michaelmas*, 1890, *Eight Shillings per week.* And at the expiration of his term, if he shall have conducted himself to the entire satisfaction of his MASTER during the said term, AND ONLY IN SUCH CASE, to give him, over and above his wages, *Thirty-five Shillings. It is also agreed that any cow found to be only partially milked, the Servant shall submit to be fined a sum not exceeding Two Shillings and Sixpence.*"

The fine of one-third of a week's wages for neglecting a small fractional part of half a day's minimum task is noteworthy. The plea that a cow is injured by not being fully milked would appear more reasonable if similar consideration were shown for the human slave who milks it.

Not only must this unfortunate "hired servant" show sufficient self-control "not to use profane language" under circumstances of great provocation, he must also exhibit the virtue of punctuality. Assuming that his master is merciful to his man as well as to his beast, and, in spite of the privilege which the agreement gives him of working his slave "all round the clock," only exacts an average of 10 hours a day for the seven days a week, the wages come to about $1\frac{1}{4}$d. an hour. This is the computed value of the servant's work when the master has to pay him for it. But when it is a question of fining the poor wight for not doing his work, his services are valued at the rate of a mechanic. For "it is also agreed, that should the said SERVANT absent himself at any time (by being late in the morning or otherwise) from his work, it shall be lawful for the MASTER, as he may see fit, either to rescind this agreement, or to deduct from the weekly wages of the said

SERVANT a sum not exceeding *twopence* for every quarter of an hour he is so absent."

Once more: there are no "extras" beyond the bonus already mentioned, not even, in this case, the usual "house rent-free," and the agreement is carefully framed so as to relieve the employer of every sort of liability, while bringing home the fullest responsibility to the other high contracting party:—

"It is also hereby agreed that should the said SERVANT be prevented by accident, sickness, or any other cause whatever, from attending to his duties, an amount equivalent to the time he is so incapacitated shall be deducted from his wages; and it is further agreed, that should there be any negligence or misconduct on the part of the SERVANT, the MASTER shall have full power to set aside this agreement, and the SERVANT shall make good any loss the MASTER may sustain from either of these causes."

A clause like this—and similar provisions against liability for *accident*, or during sickness, are found in other agreements in use in Berkshire, Yorkshire, etc.—deserves the attention of a Home Secretary, who has shown so much interest in the question of Employers Liability. And surely the next Truck Act should contain a clause making these "fining" clauses plainly illegal.[1]

It only remains to add that the lad, now grown up to man's estate, was still working, in 1893, under an exactly similar agreement, except that his wages had been raised to 10s. a week.

Head shepherds in this district appear to be paid 12s. a week with certain bonuses, contingent upon the number of lambs they rear, and a cottage; under shepherds, 11s. a week, with a smaller bonus; carters, 12s. a week, and £3 at Michaelmas; cowmen, 10s.

[1] The Law Officers of the Crown have given it as their opinion that the effect of the decision in *Howlett v. Allen* is, not that fines are illegal, but that deductions from wages on account of fines are not authorised, and therefore are prohibited under the Truck Act. Mr. Gauntlett says that the fines are very rarely enforced. This may be so, but does not alter the fact that a man who is compelled, in order to obtain employment, to sign such an agreement, is no longer a citizen but a slave.

a week, their agreements being in other respects like the one reprinted above.

How the country labourer with his proverbially large family makes both ends meet on his scanty wages is a standing puzzle to townspeople like ourselves. "How do you all manage to live on 10s. a week?" I have often asked a labourer's wife. "Sir," is the frequent reply, "we dont live; *we only linger.*" Of course the garden, and sometimes the allotment, helps them out with vegetables; but it is not fair to count this in, as is often done, as if it were part of the wages they get for their work on the farm; it represents very hard work when they should be resting. The Red Van lecturers have been at some pains to collect a number of "labourers' budgets." Nearly one half of the total income of the family is usually spent on bread and flour. Tea, butter (or is it margarine?) or lard, cheese, sugar, a hundred weight of coal, oil, candles, blue, soda, pepper, and salt, account for most of the balance. Luxury is represented sometimes by an ounce of "shag"; thrift, frequently by the weekly "club money" paid to an Industrial Insurance Company, or local Provident Fund. Butcher's meat seldom appears on the labourer's table; a vegetarian might say, so much the better. But it is surely an intolerable scandal that in pastoral districts, which send milk by the thousand gallons to London, there should be no milk for the young children of the men who work on the dairy farms, and that in the rare case in which a somewhat better paid labourer confesses to the use of milk, it should be in the form of a tin of *condensed* milk once a fortnight.

We are told on official authority that in the Devizes workhouse the cost for provisions, necessaries and clothing is one shilling a day for each inmate, of which 8d. a day is for food alone. Yet, in East Wilts, outside the workhouse, married labourers with families are expected to provide food and clothing and all other necessaries, and to pay rent, out of 10s., and sometimes even out of 9s., a week, with a small uncertain addition at harvest. "When I asked how they managed for clothes," says one of our lecturers, "Mrs. —— replied, 'That when clothing was bought, *they had to do with*

something less to eat.'" When you win the confidence of the labourers, many of them reluctantly admit that they do *not* "make both ends meet" on their weekly gettings. The young fellow of 19 or 20 is probably earning as much as he will ever earn in his life, for one of the most hopeless features of the labourer's life is the total absence of any "career" for him in his native village. When he is married, and his quiver begins to fill, he gets no more. While his children are young he is often compelled to run into debt. However ingenious his young wife may be in contriving unheard-of economies, the bare minimum of bread and cheese, and bacon and groceries, upon which it is possible to exist and work, cannot be bought with the weekly wages, and if consumed, have to be, in part at least, owed for. "I could take you," said a country miller, "to several men here who, while their children were young, ran up baker's bills with Mr. W—— to £30 or £40. When their children commenced to work they started to pay the debt off, and some of them have been paying for 10 or 12 years and are not clear yet." The honesty of the father, and the affection of the son, combine to drive our country children out of school and into the fields, at the earliest moment permissible by law, and, not only does the child lose the advantage of the extra schooling, but he actually becomes a competitor in the restricted labour market of the village against the father he is loyally trying to help.

The late Professor Thorold Rogers proved by unquestionable documentary evidence that in the fifteenth century the ordinary wages of agricultural labourers in this country were equivalent to about 24s. of our currency, with an increase of about 50 per cent. in harvest time. Work was probably far more regular than now; eight hours was a working day. When women worked in the fields, which they rarely did, they were equally well paid with the men. Provisions were extraordinarily cheap. The peasant's hut and curtilage was occupied at a fixed rent of 2s. a year, which would be less than 6d. a week of our money; the curtilage of his cottage was far larger than the villager's garden is in our time; he had his share in the common of pasture; he was able to keep poultry, probably a cow, certainly pigs; his employer constantly gave him

portions of food under the name of "nonschenes" daily; in harvest time his wages were not only increased, but he was frequently boarded as well.[1]

For four centuries, since the "Golden Age of Agriculture," the landlord, as legislator, administrator, church patron and justice, has swayed the destinies of the rural districts. Statutes of Labourers, Laws of Parochial Settlement, Enclosures of Commons,[2] Poor Laws, Game and Corn Laws, the Substitution of Indirect Taxation for the feudal dues of the landholder, the letting-down of arable land to pasture, and the rack-renting of the farming class, have in the meantime reduced the agricultural labourer to the condition in which we find him in this year of grace 1894.

But it may be said—it often *is* said—that the farmers cannot pay better wages than they do, because they have been ruined by agricultural depression. It is not worth while to delay now to discuss the fact that in almost every district some farmers pay higher wages than the average, and find it quite worth their while to do so. It may readily be admitted that the agricultural depression has hit the farmers very severely, and that, although as a class they are not perhaps so badly off as they profess to be, many of them are in a very bad way.

The historian of English agriculture and prices expresses his conviction[3] that the effect of "unpropitious seasons" has been trivial as compared with other causes of depression, and that "foreign competition" has had "no effect except in the muddled and selfish

[1] "Six Centuries of Work and Wages" (Ed. 1884), pp. 327 ff., 540 ff.

[2] Between 1702 and 1796 there were passed 1,776 Enclosure Acts dealing with 3,142,074 acres (Committee of House of Commons, 1797). Between 1719 and 1819, 2,100 Acts were passed (Report on Agricultural Distress, 1836). In the first 42 years of the present century, there were 1996 such Acts. In 634 cases the acreage is not stated. The other 1,362 Commons had an area of 1,892,552 acres (House of Commons Return, 1843). It is estimated that 7,000,000 acres were enclosed between 1702 and 1876 ("Clifford's History of Private Bill Legislation," I. 25, and Appendix B. II.), and that the area enclosed under 4000 Acts "exceeds on a moderate calculation 10,000 square miles ("Macaulay's History," c. 3).

[3] Thorold Rogers, "Six Centuries of Work and Wages," pp. 518, 519.

heads of protectionists, as may be proved by obvious and measureable facts." The "other causes" to which he refers are (*a*) insufficient capital; (*b*) excessive rent; (*c*) insecure tenure; (*d*) inefficient labour. All the facts go to show that (*a*) is the result of (*b*) and (*c*) and the cause of (*d*). In one word, therefore, the cause of agricultural depression, of the poverty of those, whether farmers or labourers, who till the soil, is *landlordism.*

"For centuries," wrote Thorold Rogers in 1884,[1] "the law and the government" [*i.e.*, practically, the landlord class] "interposed on the side of the employer in order to lessen the labourer's share. . . . At last they gained their object, and gradually reduced the labourer's share to a bare subsistence, so bare that in order to get their necessary work from him they supplemented his wages by a tax on the general public, as they do in a less degree to this day. The worst time, however, in the whole history of English labour was beginning when [in 1796] Eden collected the facts which he gives as to the labourer's earnings. This condition of things was continued for twenty-five years. The farmers competed against each other for occupancies, and constantly offered higher rents, which the enforced cheapness of the labourers' wages enabled them to pay, and the necessities artificially created by the Corn Laws enabled them to increase. They made common cause with the landlord, and worked against the interests of the labourer and the general public, the body of consumers. They achieved the former by driving wages down to a bare subsistence, and the latter by maintaining an artificial dearth. . . . But though there was a shrinkage on both sides in the quality and quantity of labour, in the prices of certain farm products, and in the profits of agriculture, rents went on steadily increasing. It was an open secret that even when these enhanced rents were being paid, the farming class had so narrow a margin of profits that even slight reverses would become serious. It was known that agricultural capital had greatly diminished, and that the cultivation of the soil was gradually becoming slovenly and imperfect. At the last the crisis came, and the foolish payment of excessive rent, and the equally foolish re-

[1] Ch. xvii. *ad fin.*

ceipt of excessive rent, have produced a disaster in English agriculture to which there is no parallel in the annals of that industry. The case is made worse by the fact that there appears to be no prospect of an early and vigorous recovery, even though much rent is sacrificed."[1] Or, to take the testimony of another recent and acute observer, "It thus appears that in both portions of the United Kingdom so heavy a burden is placed upon the agricultural industry, in the shape of the charge for the use of land, that the profits of industry are rapidly disappearing, and the capital of the farmers is being absorbed in rent."[2]

The "appreciation of gold" has aggravated the evil, for every sovereign paid in rent now represents a larger share of the produce—and a diminishing produce at that—than it did formerly. And even the efforts of the labourers to better their condition have only intensified the evil, because the essentially unjust basis of rural society has remained unchanged. On this point let us hear a very competent authority on rural matters. What the Rev. C. W. Stubbs [3] says of Bucks is just as true of other counties:—

"The agricultural labourers' agitation, under the leadership of Mr. Arch, succeeded in raising the wages from 12s. to 15s. a week. The farmers protested that they could not afford to pay the extra wage. They were not able, however, to resist the pressure of the Union, but were compelled to give the extra 3s. a week, but they avenged themselves, as they thought, by employing less men. At first the plan seemed in every way excellent. A farmer employing 10 men knocked off 4, and thus saved £2 8s. per week on his labour bill. To the remaining 6 men he gave the extra wage of 3s., or an increase of 18s. on his weekly labour bill. The net gain to the farmer *in money* was thus 30s., and his net loss *in men* was 3 labourers. *But the money was in his pocket and the*

[1] Rather, however, by way of exceptional remission than of permanent reduction.

[2] Mr. Arthur O'Connor, M.P., Minority Report on Trade Depression. "Final Report of Royal Commission," 1886, p. lxxv., and compare "Draft of Observations on the Evidence," p. 91.

[3] "The Land and the Labourers" (Swan Sonnenschein, 1884), p. 21.

men were out of sight. This was all very well for the farmer, but how about the land? 'Ay, there's the rub?' It was starved for lack of labour. Then came the wet years, when more than ever labour was needed. But the labour was not now to be had. It had been driven out of the country."

"In the towns," says Dr. Jessopp, "bad houses do not drive men away; in the country they do." And bad enough, in all conscience, is the housing[1] of the labourer who tills the landlord's fields. For over the greater part of England it is still, unhappily, as true as it was in 1878, that the labourer "is obliged to live, or is willing [?] to live in houses where the very first principles of morality, cleanliness, decency, modesty are impossible."[2] Very often the dilapidated walls and roof are proof neither against wind nor wet. "You may shut the doors and windows of my house," said a Suffolk labourer to me, "but you can't keep the cat out!" The country cottage looks very picturesque in the summer, but it is often shockingly overcrowded all the year round. Frequently the walls and the floor reek with damp. The sleeping accommodation is horribly inadequate, whether from the point of view of the sanitarian or from that of the moralist. The bedrooms—often the one bedroom—wretchedly small, sometimes not high enough to stand upright in, damp and draughty, are, in many cases, mere lofts or sheds, less comfortable than the stables at the village inn, far less habitable, probably, than the kennel in which the owner of the cottage keeps his hounds. Bedrooms without windows; sometimes without even fireplace or windows; with windows that will not open at all, or that open only on to a pigstye or cesspool; with no ventilation except the draught that whistles through the

[1] See, for a fuller treatment of this subject, the "Red Van Reports"; "First Report of the Royal Commission on the Housing of the Working Classes" (1885); "Life in our Villages" (Cassells); Dr. Gresswell's "Report to the Local Government Board on the Sanitary Condition of N. W. Bucks" (1889); "Report of Special Committee of the Cornwall County Council" (1890); E. O. Fordham, "The Home of the Farm Labourer"; the present writer in *Echo*, December 16, 1893; George Edwards, *Echo*, January 3, 1894; etc., etc.

[2] Rev. C. W. Stubbs "Village Politics," p. 18.

walls or pours down on to the bed through the roof—what wonder that rheumatism and typhoid, pleurisy and bronchitis, diphtheria and influenza are rife in the villages to which we send London children in search of health, and from which they sometimes return from their holiday "in coffins hermetically sealed."[1] And "apart from serious illness," as Dr. Thresh points out, the wretched condition of the cottages is "the cause of depression of vitality, generally affecting the bodily vigour as well as the spirits, and rendering the system unable to withstand the actual onslaught of disease." Even of such cottages the supply is becoming inadequate to the demands of the population. The pulling-down of cottages goes on steadily,[2] not nearly so rapidly indeed as would be the case if the sanitary laws were enforced, but the pulling down becomes an almost unmixed moral evil when no steps are taken to replace the old cottages by better ones.

When the cottages are held direct from the landlord, their inmates frequently suffer under the neglect or tyranny, or both, of the owner. Some few landlords have made great improvements in the housing of their labourers in recent years, but in many such cases the inhabitants of the model village groan under such an intolerable despotism that, as one of them put it, "you mustn't sneeze in this village without the permission of his lordship's agent." In one case, at least, an agreement has to be signed, by which the landlord reserves for himself and his agent the right to enter and inspect the whole of the cottage without notice at any hour between 6 a.m. and 6 p.m., and to say "what portion, if any, of the garden shall be used for the cultivation of flowers."

But, undoubtedly, the worst evils of cottage tenure show themselves in those villages where the cottages are "tied" to the farms. The farmer then becomes the work-giver and the house-lord to all his "hands," in fact, a deputy landlord. In Wiltshire, out of 2958 cottages in 45 parishes, 1660 were found to be tied, and the case of Norfolk is probably nearly as bad. The tenant is liable to eviction at a week or a fortnight's notice, and is often

[1] "Life in our Villages," pp. 141-2

[2] See returns of inhabited houses in Census Reports.

subject to the most vexatious restrictions. He may not work for any other farmer save the one from whom he holds his cottage. Sometimes he is forbidden to keep a pig or to take in a lodger, or is bound to worship at a certain place. He is liable to eviction if he affords houseroom to a daughter who has returned from service "in trouble"; or if he harbours a Union meeting, or even joins the Union or agitates for better wages; or if he votes for or supports a candidate of the wrong colour; or if he commits an offence against the Game Laws; or if his grown-up sons refuse to work on the farm on the same conditions as their forebears. But whatever complaint he may justly have as to the condition or tenure of his cottage he has seldom any option as to paying his rent, for that is deducted from his weekly or fortnightly wages.

Closely connected with the insanitary condition of the cottages is the question of water supply. Water—"as thick as swill"—drawn from roadside ponds supplied by the surface drainage of the fields, is often the only water obtainable for all domestic purposes. These stagnant ponds, into which every passing dog may plunge, and to which cattle and ducks and geese make frequent resort, yield a liquid which, at its best, teems with minute life, and at its worst is nothing but dilute sewage. A heavy rain washes the fields and replenishes the village "water-works." Shallow wells are little, if at all, better; and within a few yards of them may often be found the pigsty and the cesspool. The privies at one point drain into a stream from which at another part of its course the villagers dip for their water. In how many English villages is the water supply throughout of a satisfactory character—pure and abundant?

Local Government in the villages has been reduced to its simplest terms. Maybe the whole of the land is in the hands of one landlord, often an absentee. He lets the land, and the cottages on it, to one or more farmers, who pay him the rent and sometimes the tithe. The farmers control (during his lordship's pleasure) the cultivation of the land. In their hands are all the opportunities for work and all the homes of the village. They are the churchwardens, the overseers, the guardians of the poor, the school

managers; they control the charities, and, if there are any, the allotments. On Sunday the labourer, if he goes to his parish church, "sits under" a parson appointed by the landlord. When he is at last unable to work any longer, he must apply for relief, grudgingly given, to the farmers who have sweated him all his life, and whose highest ideal is to "keep down the rates." He cannot even meet with his fellows in the state-aided schoolroom without obtaining the consent of the authorities against whose tyranny he seeks to combine. This is no fancy picture; it almost exactly describes the condition of such villages as the Earl of Pembroke's Stanton St. Bernard, or Mr. Penruddocke's Compton Chamberlayne, or many another village where landlordism stands "naked and unashamed."

Go into any village you like, and ask the labourers about their charities. They will not improbably tell you that "the charity money was sifted through a five-barred gate, and what was left on top was for the labourers;" that the poor's land is rented to So-and-so for so much a year, but that "they never heard tell of any poor person who ever had any of the money;" that if there are any allotments they have been obtained with great difficulty, that they consist of the "worst land in the village at the best rent," far higher than the farmers pay for similar or better land, grudgingly let on stringent conditions, not large enough, with no right to erect suitable buildings, not near enough to the cottages to enable their holders to make the best use of them. Under the almost uncontrolled sway of landlordism, small farmers have been evicted to make way for large capitalist holders, and the labourers have been kept off the land. When we realise how much the occupancy of even a small allotment at a fair rent adds to the labourer's independence; how he learns in his evening work on his little patch, the difference between what he *produces* and what he *gets* when working for the farmer under the landlord, and how much more the land might produce if the big farm were as well worked as the small holding—the strenuous resistance of the landlord class to the extension of allotments becomes intelligible,[1]

[1] F. Verinder in *Church Reformer*, Jan. 1892; Rev. J. Tuckwell, "Allot-

and we begin to understand the eager desire of the labourer to rent a small patch on fair terms from a public authority rather than to buy, or to hold under a rack-rent on an insecure tenure from a private landlord.

I have dwelt so long upon the grievances of the agricultural labourer that I have left myself little time to speak of the remedies for them. I think, however, that some at least of the most urgently needed remedies will have already suggested themselves to you during the unfolding of the terribly depressing story which it has been my duty to tell. The labourer wants better wages, shorter hours, a Saturday half-holiday, more regular employment. He wants a healthy home on a secure tenure and an abundant supply of pure water. A drastically-amended Truck Act would be of great benefit to him. If I dared, I should like to suggest a great raising of the compulsory school age—shall I say to sixteen? Some of these things he will ultimately get through the agricultural labourers' unions which are springing up in connection with the Red Van crusade. At least the promise and potency of some others are offered to him by Parliament in the Parish Councils Act, which will lay the foundations of local self-government in the rural parishes. But one reform above and beyond every other is needed before the labourer, now a mere slave mocked with the title of freeman, really becomes an enfranchised citizen. He needs *free access to the land,* on which and from which he and all of us must live. While the land is the private monopoly of the few, the industrious tiller of the soil must necessarily remain the slave of the land-"owner." "He takes my life who takes the means whereby I live." Tax land values 20s. in the £, and the difficulties about allotments and small holdings will naturally right themselves. Landlordism must be abolished if the agricultural labourer is to be set free. But, as Henry George once put it, "don't *kick* the landlords out"—that might seem unnecessarily harsh to men who are, after all, only the creatures of an unjust system; "don't *buy* them out"—that would

ments (Jarrold & Sons); Stubbs, "The Land and the Labourers;" C Wicksteed, "Village Politics" (Reeves).

only be to remedy one wrong by another; "but *tax* them out." So could we relieve the working farmer and the working labourer of the load of indirect taxation under which they now groan; so could we make the people of England the landlords of the soil of England. The labourer cannot do this either by himself or through his Union, but he can use his Union as a means to organise his vote, and to make Parliament his obedient servant in the working out of Land Restoration.

BRICKLAYERS.

By Alderman H. R. Taylor, L.C.C., Secretary to the Central Committee of the Operative Bricklayers' Society.

THE origin of the art of bricklaying, and the methods of working pursued by the earlier bricklayers, are subjects about which very little, if any, information is now known. The industry, however, in some shape or form, must have existed for many ages, as is evidenced by the numerous remains which have been discovered in recent years. Thus, well-burnt bricks have been found in the remains of submerged towns in the channels of the Nile in Upper Egypt, in the buried ruins of the ancient civilisation of Mexico, and in other sites of pre-historic activity. There have also been found specimens of the sun-dried bricks, or "adobes" as they are called, of the Egyptians, which bear the stamp of the king who ruled at the time of their manufacture. The revolt of the Hebrew Bondsmen in Egypt, in B.C. 1490, against being required to make bricks without straw, and other facts of equal authenticity, all go to furnish ample proof that the industry has flourished among many peoples and races of the past.

It is, however, highly probable that, in earlier times, the term bricklayer included all those who were engaged in the building industry. The workman then was equally capable of working in mud, wood, stone, or brick, and no differentiation of the numerous classes had taken place. But with the development of the architectural art, and the growing magnificence and more elaborate conceptions of buildings on the one hand, and the natural inclination and aptitude on the part of the workmen for

particular branches of the work on the other, the present sub-division or sectionalisation of the trades arose. Even now, however, in many of the smaller provincial towns, the term bricklayer denotes a workman able to do not only bricklaying, but also tiling, slating, plastering, and masonry work. But the tendency is all in the direction of even further sectionalism. The larger the town or city is, and the greater the volume of business falling to the building trades, the stronger is the tendency to split up and sub-divide the trades even further than they are at present. This tendency the workmen naturally resist as far as they can, knowing full well the evils it brings in its train, and having so many object lessons as to its results, from the effects which it has produced in those other trades where it is already further advanced than in their own.

Whilst there is abundant evidence of the existence of highly skilled artisans in this branch of the building industry in our country for many hundreds of years, very little is known of the conditions or movements of the operatives before this century. During the Middle Ages we know that their wages were regulated by Acts of Parliament [1] as were those of other trades. With the repeal of these Acts at the end of last century, the workmen, finding their standard of life no longer supported and maintained by legal enactment, were thrown upon their own resources, and began to form combinations for their own protection. The earliest instance of this movement among the bricklayers, with which I am acquainted, took place in Kent, in 1810. I have seen an old card of membership of "The Kent United Friendly Society of Bricklayers," instituted March 19th, 1810, at Maidstone, and bearing the motto, "In God is all our trust." No doubt this is only an example of many similar societies which must have sprung up all over the kingdom. In 1820 the bricklayers of London presented "a dutiful and loyal address" to Queen Caroline, expressing their indignation at the injuries and insults offered to her,

[1] Dr. Brentano has noticed that the great majority of the legal regulations of wages in the Middle Ages relate, if not to the agricultural industry, to the building trades.

and hoping for her acquittal.[1] To this Her Majesty returned a gracious reply. Little more than is here indicated is known of these early combinations. There is, in addition, however, evidence of the existence of societies of bricklayers in Glasgow, Dublin, and Belfast between the years 1810 and 1820, and altogether we may fairly conclude that they were not behind the other artisans of that time in organising themselves.

In 1833 the first known national organisation of bricklayers was established,[2] and it continues in existence to this day. The previous year had seen the birth of that remarkable federation of trades known as the Builders' Union.[3] This organisation, which appears to have embraced every section of operatives engaged in the process of building, spread with remarkable rapidity over the Midlands and Northern Counties. Under its direction great strikes occurred, early in 1833, in Liverpool, Manchester, and other towns, in which the whole of the building trades came out together for various improvements in their conditions. In September, 1833, it held a great Builders' Parliament in Manchester, which lasted six days, and was addressed by Robert Owen, and in December of the same year the foundation stone of a great National Builders' Gild Hall was laid in Birmingham with much pomp. But this period of activity and excitement soon after came to an end. The employers were victorious in their conflicts with the men on all sides, and by 1834 the Builders' Union was defunct, and its great hall was never completed.[4]

[1] From the charges brought against her by her husband King George IV. in his efforts to obtain a divorce.

[2] The United Operative Bricklayers' Trade, Accident, and Burial Society, established in Manchester, 1833.

[3] The Builders' Union published a weekly penny newspaper, *The Pioneer, or Trades Union Magazine*, which contains much interesting information of the concurrent Trade Union struggle. For further information concerning this movement see "The History of Trade Unionism," by Sidney and Beatrice Webb (Longmans, London, 1894).

[4] For an account of this ceremony and the subsequent collapse of the movement, see "An History of Birmingham," by W. Hutton (Sixth Edition, London, 1835). The building was afterwards completed by the landlord, and now stands as a metal warehouse in Shadwell Street.

The bricklayers own Trade Union, established in 1833, continued, however, to grow slowly but steadily, and gradually spread over the North of England. It did much useful work in providing accident pay and death benefits to its members, and appears to have taken a considerable amount of actual trade action. It was, however, confined almost exclusively to the North of England, and seems at no time to have secured the support of the Southern men. In 1848 the London bricklayers, finding out the great need of some combination among themselves, established the Operative Bricklayers' Society as a purely trade organisation. By the end of that year this society had about 120 members, and a cash balance of about £15. But from that time forward it has continued to increase both in numbers and power, and has spread over the whole kingdom. At the end of 1893 it had no fewer than 22,500 members, and a cash balance reaching the enormous sum of £40,000. From the time of its formation until 1860 it remained a purely trade society, the members paying a subscription of only twopence a week, with extra levies in times of strikes. This, however, was found to be insufficient, and in January, 1861, the contribution was raised to threepence a week. In October, 1867, it was again increased to fourpence halfpenny a week, and trade, sick, and funeral benefits were then provided. The contribution was again found insufficient to meet the benefits offered, and in 1869 it was raised to sixpence per week, where it remained until 1885, when superannuation benefit was added to the Society and the subscription raised to 1s. per week, due provision being made for a reserve fund to be kept intact, to meet the superannuation claims.

The great strike and lock-out of the London building trades, in 1859, severely tested the strength and solidarity of the Union, but after a protracted struggle, in which the men, and their wives and families, suffered untold misery and privation, and in spite of the determined opposition of the employers and the misrepresentations of the press, the men were successful. Instead of the struggle breaking the Union, it gave it additional strength, and embued its members with an enthusiasm and earnestness

which all the "flouts and jibes and sneers" of its enemies could not efface. The men had tasted the sweets of victory, and knew and recognised that they could not have won had they not been thoroughly united. The struggle further demonstrated that a Union of Unions was both desirable and necessary, and steps were immediately taken to form a council representing the various sections of the building trades, which gradually developed into what is now known as the London Trades Council. From that council, which now represents 70,000 organised workers, sprang the Trades Union Congress, representing to-day a million and a half of the workers of the United Kingdom.

Until 1862 the bricklayers were paid by the day. In that year payment by the hour was introduced by the employers, when asked for an advance of sixpence per day. It was during the strike for this advance that a "Free Labour Association of Bricklayers" was formed, but in spite of the efforts of its founders, and the subsidies of the employers, the Unionists again won their point. "The Free Labour Association" never survived the defeat, and its members, who had been raked together from all parts of the country, and to whom all sorts of inducements were held out, even to the extent of promises of at least three years constant work to lead them to become "blacklegs," were left in the lurch by their employers, who speedily got rid of them when they had served their turn, and the Unionists had returned to their work.

As time passed and the building trades developed, the piece-work system began to be introduced, firstly on small house-building known as "jerry building" or "field ranging," then to larger works, such as railways, docks, etc., and by degrees it was gradually extended into other firms who had previously been in the habit of having their work done by the day. The passing into law of the Employers Liability Act of 1880, gave a great impetus to this system, because employers were enabled to evade their responsibilities under the Act by sub-letting their work. The sub-contractors, being in the eyes of the law the employers, and being also invariably men of straw, attempts made to secure

compensation were almost always unsuccessful. In 1882 a committee, of which I had the honour to be secretary, was formed with the object of remedying this grievance, and a deal of correspondence took place with Sir Henry James, M.P.; Henry Broadhurst, M.P.; W. Laurence, M.P.; C. Bradlaugh, M.P.; Professor Thorold Rogers, M.P.; and Arthur O'Connor, M.P. The latter gentleman undertook to bring in a Bill, which, if passed, would have remedied this evil by making the original contractor responsible and liable for compensation in all instances, but the Bill was unfortunately dropped owing to the dissolution of Parliament in 1885.

Up to this time there was unfortunately no such thing as Trade Union Wages Clauses, or clauses prohibiting sub-letting, inserted in public contracts. Amongst the public bodies in the United Kingdom the London School Board was, and is to-day, one of the worst offenders in this matter. With the assistance of its members, fourth-rate and "jerry builders" blossomed into contractors, and by cutting down their prices, secured the greater portions of the work of building the various schools for the Board. Had the Board possessed any practical knowledge or business capacity, it would have known that it is false economy to accept the lowest prices without having regard to the characters of the firms or the work they execute. The ratepayers are now having to pay for the misdeeds of those whom they were foolish enough to elect to such responsible positions. This system of giving contracts to inferior builders went on for a few years, things going gradually from bad to worse, until the few who had for years been "crying in the wilderness" without much avail, were listened to and their advice accepted. The Board that was elected in 1885, passed a resolution at the instigation of Mr. A. G. Cook and Mrs. Annie Besant, for the insertion of the Fair Wages Clause in contracts, and also for a clause prohibiting sub-letting except under certain conditions. At the very next School Board election, however, the workmen, by their apathy and negligence, allowed a reactionary majority to be elected, with the immediate result that these clauses have remained absolutely dead letters ever since.

The London County Council was the next prominent body that inserted these clauses. We then began to make more rapid progress than we had ever made before, and in the spring of 1892, the London members of the Operative Bricklayers' Society sent in a notice to the Master Builders' Association asking for an increase of one penny per hour, a reduction of working hours, and a revised code of working rules. The Master Builders' Association refused to concede these demands, although they agreed to receive a deputation on the subject. The conference took place on May 2nd, 1892, and was adjourned with a view to bringing about a conference with the whole of the sections of the trade. The strike of the bricklayers which should have taken place on June 1st, was postponed, and the adjourned conference with the whole of the trades took place on June 10th. It resulted in an increase of wages of 6 per cent., or of one half-penny per hour to all sections, besides a reduction in working hours of 5 per cent. This may not appear at first sight to be a great gain, but if we assume that our London members, who number, say 6,500, work 40 hours per week for the 52 weeks of the year, the readjustment has caused an increase to them of over £28,000 per annum. In addition to this the eight hours day has been practically secured, the average working time being now 8 hours and $7\frac{1}{2}$ minutes per day. But we have gone further than this. The placing of an additional tax upon overtime has resulted in its virtual abolition; while the refusal to permit any acceptance of piecework [1] has secured the complete overthrow of that method of work in London. Finally, the employers have agreed to erect proper shelters on the works, so that a man can now cook and enjoy a meal free from the interference of inclement weather. Incidentally it may be mentioned that the advance of one half-penny per hour has become nearly general throughout the country, for the action of the Union has secured

[1] Piecework in the bricklaying trade always means sub-contracting. The contract for labour only is given to any ordinary workman at piece prices, and he engages others at hourly wages to work under him. This invariably leads to sweating, and provides an obvious reason for the men's objection to the system.

an increase in no fewer than thirty-four towns during the year.

The system of apprenticeship to the bricklaying trade is now practically extinct, at any rate, in London and most of the large towns. The causes for this are many and varied. The master builders of to-day are somewhat different from their predecessors of years ago, and many of the largest businesses are now carried on by men who are merely managers. The firms and joint-stock companies are constantly changing their hands, and their whole system of conducting business renders a proper system of apprenticeship to the bricklaying impossible and even undesirable. Many of the builders are of merely mushroom growth, here to-day and in the bankruptcy court to-morrow. Others have been in the habit of sub-letting their brickwork to sub-contractors, issuing circular letters to all the sub-contractors they know, asking them to quote prices for the work on the particular jobs. They have then accepted the lowest price although they must have known, if they know anything about work at all, that it was altogether impossible to turn the work out at the prices quoted. This system has been the means of introducing specialists, men, that is, who can only work at one branch of the trade. Many a lad and many a man has been practically ruined by this means. Their knowledge and skill are confined to one small branch of the work, and it is obvious that under such a system it is impossible to produce good workmen. To many lads, too, the rough arduous labour, the exposure to wet, bleak and wintry weather, and the restless, roving, unsettled kind of life, offers no inducements, and many prefer to be free to pick up the trade if they can, and as they can, so as to be in a position to leave it and try something more congenial, if they find it unsuited to their tastes, inclinations and constitutions. Hence apprenticeship, at least as far as bricklaying is concerned, has practically disappeared, and there seems but little likelihood of it being revived.

In many respects our position as a trade is unique, we have no female labour to compete with, nor any machinery, except what is

called a rubbing table, used for cutting, to steal our work from us. Foreign competition does not affect us, as it is impossible to manufacture dwelling-houses or warehouses abroad, and import them made ready to drop just on the site prepared for them. Neither are we in the least afraid of foreigners being imported to take our places or to compete with us, for the English bricklayer cannot be matched, let alone surpassed. Employers of labour who have any large undertakings abroad in the shape of railways, docks or sewers, are well acquainted with this fact, for they invariably employ the English bricklayers and generally at very high rates of wages.

Up to the last year no general charge of bad workmanship or shoddy work had been laid at the door of either the workmen or the Unions. But in December, 1893, a paper was read before the Architectural Association in London, entitled, "London Workmen, their Workmanship and Education," in which the writer made a serious charge of inferior work against the workmen and the Unions. The bricklayers were specially held responsible for the construction of all the bad and shoddy work, and, above all, for the materials used, as if the bricklayers supplied their own. Builders and architects, with one or two exceptions, joined in the condemnation, and various remedies were suggested, amongst them being technical education. My belief is that the builders, architects, and the general public are alone to blame, and that very little can be attached to the workmen, who are just exactly what their early training, their employers, and their industrial and social environments have made them. The workmen are compelled to rise early in the morning, and often to travel many miles to work through all kinds of weather, and then frequently have to hang about the greater part of the day through stress of weather, with no place to take shelter in except the nearest public-house. When they are at work no facilities are given them to obtain a cup of tea or coffee or anything but intoxicating liquors. They are compelled oftentimes to use the worst of materials and to scamp the work through being allowed neither time nor materials necessary to produce good work. They are

then expected to tell any number of lies to screen the employer, or resort to any means to increase his profits or to enable him to cut the prices still lower. With such conditions as these, how can it be expected that the workmen are to be either saints or artists?

Then, too, the cut-throat competition amongst the employers, in their feverish haste to get rich; the demand of employers, architects and public for "cheap work and nasty;" and the practice of making quantity the first consideration, with quality the last or no consideration at all, have all tended to demoralise the workmen, and the only wonder is that they are half as sober, or industrious, or thrifty, or as intelligent as they really are. If shoddy work has been produced it has been according to order. Let the demand be for good work, and the supply will be equal to it. We may be ignorant, but what have the employers or architects or the public, who are always ready to condemn, done to enlighten us? And if we are demoralised what have they done to make us otherwise? By a strange coincidence, however, the architects did not become aware of shoddy work being done until the men themselves had taken the matter in hand and refused to scamp work any longer. One thing is certain, however, and that is so far as we are concerned the days of slavery are past and gone. The bricklayers of to-day, and of the future, will never again do as they have done in the past. Quality will be made the first consideration, and I believe, in a very few years, the sweater will be unknown amongst us.

The future for our trade is full of promise, and if our members are wise and discreet, we can be absolute masters of the situation. There must not be, however, any cavilling or any schism. The strike, as a weapon of industrial war, is rapidly becoming obsolete, and educational work will occupy its place. Education is certainly destined to be the most powerful factor in the labour movement, and I firmly believe that the more enlightened our members become, and the more they study their real interests, the plainer will they see the desirability, and, indeed, the absolute necessity, of forming not sectional societies, but one powerful and thoroughly united organisation extending not only to London,

but to the whole kingdom, and in time, perhaps, to the whole civilised world. I feel equally certain that until this is so, intermittent internecine warfare will always prove a source of grave anxiety to the real friends of labour, and a source of weakness and danger to the labour movement itself. With a rising generation coming into our ranks, equipped with a better education than it has been our lot to receive; with a more enlightened and generous public to demand good work; with the facilities now offered to those willing to learn, of securing a good, sound technical education practically free of cost; with the numerous free libraries, polytechnics, and places for the physical and intellectual improvements of the workers; and with the shorter hours of labour, it will be strange, indeed, if those engaged in our craft do not avail themselves of the opportunities thus afforded them to lead happier, healthier, brighter and more useful lives.

POTTERY.[1]

By S. J. Thomas, Secretary of the Amalgamated Society of Pottery Moulders and Finishers, London.

It is impossible for me, in the brief space at my disposal, to attempt to give an elaborate history, or a detailed description of the pottery industry. Its great age, combined with the extremely technical and complicated nature of the processes of the trade, and the vast proportions which the industry has now assumed, would require a very large volume to be thoroughly dealt with. All that I can hope to accomplish is to speak very briefly of the origin of the art, and endeavour to describe some of the chief features of its present condition.

In an interesting article[2] by Mr. Grant Allen, that delightful philosopher has endeavoured to provide a theory of the origin of the potter's art. He describes the savage, boiling his food in puddled holes in the ground, the water therein being heated by dropping into it red-hot stones prepared in a fire close by. In time the savage, noticing the power of clay to retain water, is struck with the brilliant idea that by coating a gourd over with a thin layer of clay, and scooping out the pulpy inside of the fruit, he might be able to boil his water directly in the fire, and thus avoid the troublesome and cumbrous method of puddled holes and red-hot stones. Although this explanation is necessarily no more than an ingenious theory, it has received considerable support from specimens of early pottery ware which have been discovered. Thus pottery has been found in the remains of pre-historic America with the rinds of gourds still inside the coatings of clay,

[1] This lecture was illustrated by various shapes turned on the wheel, on the platform, by Mr. Dupuis.

[2] "The First Potter," by Grant Allen, *Longman's Magazine*, June, 1885.

and also examples of partially baked ware bearing the impressions of plaited bark or twigs on the outside, thus showing that it was moulded inside some rough wicker-work frame. If this be really the earliest method of forming the shapes of pottery ware, then the "moulder" who is still at work on a practically identical method has the honour of belonging to the first branch of what is probably the oldest of all the skilled handicraft trades. A branch, indeed, which must have existed thousands of years before the introduction of the potter's "wheel," with which the manufacture of pottery throughout the world is now identified.

Whether this ingenious theory be a true explanation of its origin or not, all authorities are agreed as to the enormous age of the pottery industry. Learned geologists have proved that it is, indeed, almost as ancient as the human race itself, and we know that at a very early period it had reached a state of great perfection. The Chinese and the Egyptians were, it is supposed, the two nations which first excelled in this art, and the very high degree of excellence attained in this work, both by these two nations and by the ancient Greeks, may be seen by all in the numerous and beautiful specimens of their ware preserved in our museums to-day. In some respects, indeed, the ancient Egyptians and Greeks carried the potter's art farther even than we are able to take it now. Under their guidance the arts of design and of glazing in pottery made such wonderful progress, and approached so nearly to perfection, that we have never succeeded in equalling them, and we are unable now to produce the beautiful results in these two respects which were achieved by them thousands of years ago.

The pottery industry in England, did not, so far as I know, assume the proportions of a grand industry until about the end of last century. Prior to that time, its reputation here rests rather upon the excellence of the productions of a few special firms, such as the makers of the Royal Derby or Worcester Ware, than upon the great size or importance of the trade. There is very little evidence so far as I am aware, of the condition of the workmen, or the methods under which they worked during this

period. Such evidence as I have been able to find appears to show that the relations between the employers and their workmen in those days were distinctly patriarchal.[1] The workmen appear to have made, decorated and fired their own productions; each one had his own specialities in design and colour schemes; and, indeed, they appear to have been regarded more as artists than as mere journeymen workers. Their earnings, too, if we may believe this authority, were considerable, and it was no very unusual circumstance for one of them to go off and start in business on his own account, with the reputation his work in his old shop had gained him for goodwill.

From about the middle of last century, however, the trade began to grow a large one, and to become more and more localised in the neighbourhood of North Staffordshire, which is still the principal seat of the manufacture in England. Although we have no reliable information of the condition of the trade even at this time, we may not unreasonably suppose that the increase in the size of the industry, and the introduction of the factory system, very speedily led to a more or less complete differentiation of the workers and sub-division of the trade. With these changes would come, no doubt, a steady decline in the position of the worker, who would find himself degraded from the condition of an artist to that of a mere factory hand. His earnings, too, would be slowly but surely reduced by the falling prices of the ware occasioned by the ever-growing competition of his employers to find a market for the largely increased output he now produced. Under all these adverse circumstances, and finding that appeals to Parliament for assistance, and the redress of his manifold grievances, were in vain, he would naturally fall back upon the last resource left to him, and combine with his fellow-workmen for their mutual protection.

Under some such circumstances as these it was, no doubt, that the trade clubs, which existed among the Staffordshire potters very early in this century, were first formed. We know but little

[1] See, for instance, "The Old Derby China Factory: the Workmen and their Productions," by J. Haslem (London, 1876, 4to).

regarding them, except that on the repeal of the Combination Laws in 1824, the sectional clubs, embracing several of the sub-divisions of the trade, united and formed an amalgamated association. But the trade was then in a very depressed condition, and nothing appears to have come of this early attempt by the men to improve their position. We hear no more of their Trade Unions until 1833, when the steady reduction in wages which still continued, once more goaded the workers into forming an amalgamated union which included every class of operatives in the potteries. Its first act is said to have been to take a factory for the manufacture of pottery on the co-operative principle, under the influence of Robert Owen's teachings. This attempt, however, proved a speedy failure, and was quickly abandoned. Nevertheless the union continued, and grew so powerful that in 1835 it induced the employers to form a joint-committee with its officials, and drew up a revised and uniform list of piecework prices for the workmen throughout the whole trade. In 1836 this list of prices was again revised, after much agitation and a considerable number of strikes, and the still famous "Green Book of Prices of 1836" was gained by the men. They also succeeded in getting the Employers' Association, or Chamber of Commerce as it was called, to appoint a small committee of three of its members to act with three of the men's representatives as a Joint Conciliation Board,[1] to settle disputes arising out of the list of prices, and to fix prices for new articles.

The men, however, were still dissatisfied. The system of "Good from Oven"[2] was a very great grievance with those sections of the men who actually worked in the clay, while, in addition, all classes agreed in wishing for a limitation of the

[1] This is one of the very earliest instances of the existence of a Joint Conciliation Board known in Trade Union history.

[2] "Good from Oven" is a system still in operation throughout North Staffordshire and some other pottery districts, by which the men who *make* the ware from the clay are compelled to suffer the loss of payment for all such articles as do not, from any fault or cause, whether one which they could control or not, come "good" from the first, or "biscuit," oven.

number of apprentices or learners. The men's union endeavoured to obtain some concessions on these points from the Employers' Association, but finding that the employers steadily refused to agree to any alteration in the trade customs in these respects, they determined to strike for their claims. The employers, however, determined to forestall the men. They drew up an agreement by which their men were to bind themselves to their employment for periods of a year at a time, terminating at Martinmas, Nov. 11, annually; and they also inserted a clause binding themselves to find their workmen only "so much work as they conveniently could," which, of course, might mean only one day a week, and yet leave the unfortunate workmen without redress or the option of leaving their service. The result of these preposterous demands was that the men resolved upon resistance at all hazards. In September, 1836, accordingly, a number of them struck work rather than sign the agreement, and on November 11 of that year, the sixty-four employers in the association, which included all the largest manufacturers, closed their works, and 16,000, out of a total of about 20,000 persons employed in the whole industry in Staffordshire at that time, were thrown out of employment. After a struggle lasting ten weeks the men were completely defeated, their union was totally destroyed,[1] and they were compelled to return to work, in January, 1837, on the disgraceful terms dictated by the employers.

But although their union was destroyed for the moment, the men never lost faith in combination as the only method to improve their position. Gradually the sectional societies embracing one or more of the sub-divisions of the trade were reformed, and gained the support of the operatives. In 1842 the great

[1] This union left a debt of some £6,000, a large part of which was subsequently repaid by a later union in 1844 to 1850. It may throw some light on the condition of Trade Union organisation in England at that time to show whence this large sum came. £2,200 were lent the potters by the combined Sheffield trades, in addition to a large sum which they gave; the London trades gave £800 and lent £750, and the other £3,000 lent were contributed by various trades and by private individuals.

strike of the North Staffordshire miners occurred, which, under the influence of the Chartist leaders of that time, developed into the well-known Potteries Riots. This agitation in their midst gave a considerable impetus to the potters' organisations, and resulted in 1843 in the formation of a federation consisting of the unions in various branches of the trade. This federal union, which appears to have gained considerable strength, published, in October, 1843, the first number of *The Potters' Examiner and Workman's Advocate*, a penny weekly journal which was continued for many years,[1] and is full of information relating to the potters' trade and their Trade Unions, as well as of the general labour movements of the time.

The union thus established received a great impetus in 1844 from the attempted introduction of machinery to the industry. In that year the now universal "Jolly" made its first appearance in the trade at a place in Yorkshire. The Staffordshire potters, acting under the advice and eloquence of their leader of that day, determined to resist its introduction, and raised a large fund by special levies to be devoted to striking the shop and emigrating to America the whole of the workmen of any firm which brought in the machines. Fortunately, however, no need for such a struggle was occasioned. The machine did not at that time make any further progress, partly, it is supposed, through the desire of the employers not to come into conflict with the men, but chiefly on account of the fact that owing to some defects in its construction it was less useful than the employers supposed it would have been. The scare caused by its appearance, however, led the Staffordshire potters into the wild venture of a farm colony in America. A vast tract of land was bought with the accumulated

[1] This paper continued until July, 1848, when, under the influence of its editor, who had started an emigration scheme, it was changed to the *Potters' Examiners' and Emigrants' Advocate*, which lasted until 1851, and then finally died out. In 1856 the union re-started an organ of its own, a weekly journal called *The Potter*, published at ½d. In 1863 this was enlarged and again appeared at 1d. weekly as *The Potteries Examiner and Workman's Advocate*. This continued until 1881, when the unions were so crippled that the paper had to be sold to a joint-stock company.

funds, and christened "Pottersville," and a number of unfortunate, out-of-work potters and their families were exported thither. They appear to have suffered many hardships. Nothing seems to have been prepared for them, and they were simply dumped down on a tract of prairie land with no funds to support them even until the first crops could be grown. Constant disputes and mutual recriminations between the officials at home and in America ensued, and ultimately the whole thing collapsed and fizzled out.[1]

This abortive and expensive experiment appears to have absorbed the whole of the energy of the potters from 1844 to 1856, when the union began again to devote itself to more immediate and practical objects, and a considerable revival in its influence took place. In 1859 the men obtained, in consultation with a committee of the employers, a new list of prices for flat and hollow-ware pressers, which gave them considerable improvements. Little more of importance took place until 1866, when the long-continued agitation of the men against the system of annual hirings came to a head. In that year the ovenmen, whose union had become very strong, and who occupy a very important position in the industry, determined to make an effort to abolish the custom. It was agreed that on November 11 the whole of the operatives should come out on strike and refuse to sign the annual agreement. When the time came, however, only the ovenmen struck, but their unique position in the trade, and the complete organisation they then had, enabled them in two weeks to paralyse the whole industry. The result was that at the end of the second week the employers gave way, and the hated annual hiring was thus abolished and its place taken by a monthly notice to leave on either side.

This unexpected but very welcome victory put great heart into the men, and their unions in every branch of the trade grew rapidly stronger. In 1867 they commenced an agitation for the

[1] What became of the land bought with the potters' money nobody now knows or cares. It was probably appropriated by the individuals who happened to be located upon it.

establishment of a Board of Arbitration in the trade, which was successfully brought to a conclusion in 1868, when a permanent Board of Arbitration was established. During the years 1871 and 1872 all the sections of the trade gained revisions of their price lists, obtaining advances of 10 to 15 per cent., entirely by negotiations with the employers. In 1876 the employers appealed to the Arbitration Board for a 10 per cent. reduction all round, but Mr. H. T. Hinckes, M.P., the umpire to whom the case was submitted, refused to award a reduction. In 1879 the employers again appealed for a 10 per cent. reduction, and after a lengthy hearing Lord Hatherton, the umpire appointed, awarded them a general reduction of $8\frac{1}{3}$ per cent., or 1d. in the 1s. off the workmen's wages. The men were much disappointed at this, and in 1880 appealed to the Board for the return of the reduction. The case was referred to Mr. T. (now Lord) Brassey, M.P., who, however, refused to award the return of the 1d. in the 1s. The consequence was that in November, 1881, a general strike of the whole trade took place for the return of the reduction taken off in 1879. After being out six weeks, however, the men were completely defeated and compelled to return to work at the old wages, and the Arbitration Board was of course broken up and disbanded by the strike. From that time Trade Unionism among the Staffordshire potters remained at a very low ebb until 1885, when a slight revival took place and the Arbitration Board was reformed on a new basis. During 1889 to 1890 the unions among the men grew rapidly stronger, and in 1891 they again appealed to the Board for the return of the $8\frac{1}{3}$ per cent. reduction taken off their wages in 1879. The case again went to an umpire, this time Mr. Davenport being chosen, and he again gave a decision averse to the men's claim, and they therefore continue to work with the reduction of 1879 off their pay. The men were extremely dissatisfied with this decision, which was, they alleged, arrived at after an inquiry not held in accordance with the Rules of the Board, and accordingly, in 1891, the men in all the branches of the trade withdrew their representatives from the Board, which was thereupon again dissolved.

At the present time Trade Unionism in the potteries is represented by seven separate societies. They are the National Order of Potters, consisting chiefly of the flat pressers, who are now the least skilled and most numerous branch of the trade; the Hollow Ware Pressers' Society, which includes the moulders and sanitary ware pressers, and has also branches in Newcastle-on-Tyne and in Derbyshire; and the Throwers', Turners', and Handlers' Society, which comprises a small section of very highly skilled workmen. These three societies combine all the operatives who actually work "in the clay." There is also the Printers' and Transferrers' Union, consisting of those who print the patterns on to the partially baked ware; the Gilders' Union,[1] which embraces the few remaining men employed in gilding the ware; the Ovenmen's Society, which consists of those who place the ware in the ovens and withdraw it when baked; and finally the Women's Union, which accepts women employed in any branch of the trade except "transferring," the women transferrers being expected to join the Printers' and Transferrers' Union.[2] These societies are at present without any Federal Union other than that provided by the North Staffordshire Trades Council. In addition, the potters of South Yorkshire have a "Yorkshire Order of Potters," which is an amalgamated society embracing all classes of the operatives. The Scottish potters have a number of very powerful sectional societies all federated together in the Potters' Federal Union of Scotland; while in London the Moulders and Finishers have a good, strong little union of their own, which is affiliated to the London Trades Council.

From this large number of sectional societies, each embracing a completely different class of workers, it may be seen that the trade is now very greatly sub-divided. Its great extent may be

[1] This society has since dissolved. Pottery-gilding is now nearly all done by women, and the union, which accepted men only, was reduced to a very small membership.

[2] These seven societies include all the actual makers and decorators of ware. The packers, crate-makers, and some other subsidiary trades have their own separate societies also.

gathered from the fact that the North Staffordshire potteries district comprises no less than five separate and distinct towns, each of considerable importance, namely, Longton, Stoke, Hanley, Burslem, and Tunstall, as well as the two minor districts of Shelton and Cobridge. Practically the whole population of this vast stretch of country, closely packed as it is with human beings and their habitations, is dependent entirely upon the pottery trade for its living. At the present time there are probably not less than 30,000 persons directly engaged in the industry in North Staffordshire alone, to say nothing of some 4,000 in Scotland and considerable numbers elsewhere.

It is not an easy thing to attempt to describe the conditions of a trade which is so large and so completely sub-divided as this. In many details each branch differs considerably from the others, and in what is said hereafter, therefore, it must be definitely understood that a brief generalisation only is proposed. The first group of persons employed directly in the trade are the "slip-makers." These men mix and prepare, with the aid of steam machinery and mills, the "slip" or clay, ready for the potter. They are a special kind of machine-minding labourers, but are not essentially of the industry. The clay when ready is passed to the "potter," that is the operative who actually shapes the ware. Of these the largest class is that of the "flat pressers" who fashion such articles as plates, saucers, and ordinary plain round articles such as cups or pots. They work upon the "Jigger," a revolving table, which is now generally turned by steam power. Their trade has been largely revolutionised since 1870 by the introduction of the "Jolly," a kind of lever which presses down on to the clay placed on the "Jigger," and forces it into the desired shape. Up to 1870 the flat pressers were almost all men, but on the introduction of this machine they endeavoured to resist its application to the trade. The result was that they were largely replaced by women, for with the aid of the machines the trade is little more than an unskilled one. It is now largely carried on by women and girls, though a number of men still work at it. The next most important branch is that of the

hollow ware pressers. This includes all those who shape ware by pressing it into moulds made to the desired form. The moulds are cast in plaster of paris and the clay pressed into them by hand. Finally, there are the throwers, turners and handlers, who form a small group, doing the highly skilled work. The words almost explain themselves. The thrower is the man who works at the potter's wheel; the turner receives the ware when partially dried, as it comes from the presser, and with a steel tool takes off the rough surface ready for the printer or painter; and the handler makes the handles for all kinds of articles. There are many subdivisions of these groups, but they constitute the main body of the actual workers in the clay. Their work is not particularly dangerous, except in one portion of it, and that is the "fettling" or surfacing the partially dried goods. The articles when made are allowed to dry sufficiently to handle without being spoiled, and then a moderately fine surface must be given by the use of sand-paper or some other means. The clay dust which is given off by this process, consisting, as it does, of little jagged particles of china clay and flint, is very unhealthy. Its constant entry into the lungs is the cause of that particular form of asthmatic complaint known as "potter's rot."[1] The evils of this branch of the work can be minimised by the provision of a proper system of ventilation, and of "fans" to carry off the dust, and it is to be hoped that such provision may be more completely and successfully enforced by the law in the future than in the past.

When the ware is "fettled" and has left its maker's hands, it goes to the "ovenman" and undergoes its first firing in the "biscuit" kiln. From thence it passes to the "printer," who, having a copper plate engraved with the desired pattern, takes prints on fine paper from the plate, which are transferred by his woman assistant on to the ware. It is then passed to the decorator, who illumines the print so put in the ware, if such is desired. Neither of these branches is in any way a dangerous

[1] See "The Pottery Manufacture in its Sanitary Aspects," by J. T. Arlidge, M.D., F.R C.P., etc. (Hanley, 1892. 8vo

trade. They require, of course, special skill and ability, and a period of apprenticeship is usually served to them.

From the printer and decorator the ware passes to what is perhaps the most dangerous operation, that of "dipping" or glazing. This consists in dipping the piece of ware into a pail or bath of glaze made of a mixture of various articles such as felspar, soda, flint and glass dust, and oxide of lead. This latter ingredient it is which is the chief source of danger, cases of lead poisoning among the women and children engaged in this branch of the trade being by no means uncommon. It is to be noted that a glaze almost if not quite equal to that produced by the use of lead can be obtained without its admixture, and indeed several large firms have for some years made a point of never using a lead glaze at all. It is strongly to be hoped that the committee recently appointed by Mr. H. H. Asquith, the Home Secretary, to inquire into the question of the lead poisoning in pottery works, will lead to drastic regulations for the prevention of any further such cases, and for the protection of the health and lives of the workers in the future.

Finally, there remains, when the glazing is done, the last stage of baking, which is performed by the ovenmen. The ware is placed in large, coarse earthenware boxes, somewhat the shape of cheeses, called "Saggars," and these are piled up, one on the top of the other, from the floor to the roof of the oven. Then the fire is lighted, and the whole kept in an intense heat for some days. The work of the ovenman is very skilled, much depending upon his judgment, and a mistake on his part might lead to the complete destruction of many weeks' work of the other men. His trade is not necessarily dangerous by any means, but it has of late years, owing to the keen competition among the employers, been rendered at any rate unhealthy, by the fact that in their haste to get the ware from the ovens, they have forced the men to start emptying them while still far too hot. So much is this so that the Staffordshire ovenmen have had to pass a stringent rule forbidding any member to start unloading any oven while over 120 degrees of heat prevail in it, and we have it on the testimony of

Dr. Arlidge[1] that before that rule was enforced 180 and 200 degrees were no uncommon heat in which these men had to work.

As to methods of payment it may be said briefly that practically throughout the industry the method is piecework. In the cases of the workers in clay, that is the makers of the ware, the trades are all pure piecework, so much per dozen articles being paid, according to their size and shape. In the flat-pressing branch prices are very low, the large amount of machinery and of woman's labour in use having seriously reduced the earnings, so that it is difficult now for a man to get a living wage at it. The other branches are not so bad as this, but even the most skilled artisans can seldom earn more than 7d. or 8d. per hour at the good work, while in the very cheap shops they get much less. The printers and transferrers work on a curious system of piecework with a fixed weekly output, and accordingly a fixed weekly wage. The ovenmen receive day wages of 4s. 7d. per day, and have a fixed task of work to perform, that is to say that so many men are allowed so many days at 4s. 7d. a day each, to fill or empty an oven of a given size. In Staffordshire the men's union insists on a certain number of men being allowed to each group, and will not allow more than one boy to be employed to each five men. The greatest evil, however, of the trade is that the piecework prices are not uniform either throughout Staffordshire or with the rest of the country. This absence of uniformity in wages appears in all the branches of the trade, but more especially with those engaged in sanitary work. Thus Derbyshire makes some wares cheaper than any other place, while other articles are made more cheaply in Staffordshire, and the workers are therefore competing against each other, and tending to reduce prices all round. For this there is only one real remedy, and that is a strong and powerful Trade Union, either amalgamated or federated throughout the whole kingdom. With such an organisation a uniform piecework

[1] See "The Pottery Manufacture in its Sanitary Aspects," by J. T. Arlidge, M.D., F.R.C.P., etc., who suggests that 105 degrees is a prudent maximum, p. 17.

list might quickly be obtained, and a fair living wage secured for all the workers.

The industry has received a great impetus in recent years from the increasing application of pottery ware to sanitary purposes. Thanks to our valuable beds of suitable clay in Dorsetshire, we are without a foreign rival in this trade, and our exports of sanitary ware to other countries have therefore enormously increased. In short, in this branch, England for the present practically monopolises the market, and very large orders have been executed for many continental and American countries. This branch has also been considerably improved by the action of the London County Council, which has determined that every house shall be fitted up with proper sanitary appliances. London is thus being made one of the most healthy cities in the world, and it is to be hoped that the use of this very valuable form of sanitary appliance may be even more largely increased in the future, and so help to strengthen our hands in the battle against all forms of disease. This branch of the trade is, and has for some time been, very busy, and we may venture to hope that it may long continue so both for the sake of the trade and for that of the public health and convenience.

Another recent application of the potter's art to modern needs is to be seen in the manufacture of terra cotta for building purposes, the pressers and finishers of this material forming a large and well-occupied class. Terra cotta is made in almost every county in England. The buff-coloured terra cotta is made from the Poole clay beds, and it is largely manufactured in the South Devonshire potteries at Tamworth, where that used at the Natural History Museum in South Kensington, London, was made. A good deal is made in other places, however, and some of the most beautiful red terra cotta is made in Wales, from the clay beds situated there, which are exceedingly valuable for that purpose. This work, like the making of sanitary ware, is pressed in plaster of paris moulds. The men are paid piecework by measurement, and considering the difficult and laborious nature of the work, the men's earnings compare very unfavourably with those of other

skilled artisans. They suffer, too, from the want of uniformity in prices, a difference as great as 30 per cent. occurring in the piece-work rates paid by different firms for the same kind of work, which is a very serious handicap to those firms which pay the higher rates.

I had intended to have said a few words upon the services rendered by some of the employers to the trade, but space forbids that I should now do so. In an industry such as this, which is, to a great extent, still an artistic handicraft, the employer can, if he is so minded, do much to maintain a high level of quality and workmanship in the productions. The fame of English pottery in the past rests mainly upon the works produced by a few first-rate firms who turned out work of the finest quality. In spite of the keener competition of these days, and of the sub-division and sectionalism of the trade, some employers are yet striving to keep up the standard of excellence of English ware. In this direction the names of Wedgwood and of Minton, will, doubtless, recur to the reader as those of Staffordshire firms which still maintain a high reputation for excellent productions. London, too, has cause to be proud of one of its manufacturers, Sir Henry Doulton, who has done much to raise the art to its present high level, and from whose magnificent works in Lambeth some of the most beautiful specimens of works of art in pottery are produced to-day. It is a matter for much regret, however, that the employers should always have regarded with so much disfavour the attempts, which have from time to time been made by the men, to improve their Trade Union organisation, and to bring about a greater uniformity in the wages, both in London and the provinces. I cannot refrain from expressing the hope that the time may not be far distant when a better understanding of our mutual interests may exist between the employers and our Trade Unions. Such a feeling, if it could be once established could not fail to be productive of much good, both to the employers and the men, and to the trade at large.

THE NEED OF ORGANISATION AMONG WOMEN.

By Emilie A. Holyoake, Secretary of the Women's Trade Union League.

THE grave evils under which the women workers in many of the industries of our great cities are compelled to toil have been so frequently brought to the public notice that it is unhappily no longer possible to doubt either their existence or their gravity. Facts which have long been obvious to all inquirers into these questions have lately been brought more prominently into notice by the evidence given before the Royal Commission on Labour, and by the testimony of the Women Assistant Commissioners to that body. So striking were the disclosures regarding the sanitary and other conditions of the factories and workshops in which women work, and the general economic conditions under which their labour is carried on, that the four commissioners who signed the minority report of the Royal Commission on Labour [1] were led to use the following weighty words: "The evidence obtained by the Assistant Commissioners indicates that, especially in the 'sweated' trades in great cities, many hundreds of thousands of women are working at wages far below those of even unskilled men, often, indeed, at rates which are insufficient for healthy and decent maintenance. Women, too, are special sufferers from long hours and insanitary conditions. . . . . We regard the economic degradation of the women and girls in many of the industries of

[1] Messrs. William Abraham, M.P. (Mabon); Michael Austin, M.P.; James Mawdsley, J.P.; and Tom Mann.

the great cities as constituting one of the most serious of industrial problems."[1]

There can be but little surprise that, with the knowledge of such facts as these constantly before them, working women are beginning to demand great and drastic changes in the conditions under which they work. Happily, too, they are beginning to recognise that thorough organisation is the first step towards securing these changes. The teachings of experience amply show that the combination of those concerned is absolutely necessary before any important improvements in the industrial conditions of any class of manual workers can be achieved, and the knowledge of this fact is already spreading rapidly among the women workers. But after long years of economic and social dependence, during which all attempts on the part of women to take independent action in their own behalf have been severely discouraged, it is not surprising that the doctrines of combination and mutual support should take some time to gain the general adherence of the women workers. It is probable, however, that women have made quite as much progress in Trade Unionism during the twenty years it has been known among them, as men did in the first twenty years during which they began to organise themselves. But it may be safely predicted that in the future the progress of Trade Unionism among women will be much more rapid, partly because they are beginning to see more clearly its need, and partly because the opposition and indifference of men are beginning to disappear, and their Trade Unions and Trades Councils all over the country are now assisting the women to organise. Trade Unionism, to be successful, must, like charity, begin at home. If men will henceforth bear this in mind, and begin to advise their wives and daughters to become Trade Unionists, the task of organising the women workers will be appreciably lightened. A gospel which is not preached in one's home cannot help being less effective when preached abroad, and men will find that their own spirit of unity

[1] See "The Minority Report of the Royal Commission on Labour," pp. 18, 19. Reprinted by the Labour Press Society, Manchester, 1894; price 2d.

will not be weakened by the participation in it of their wives and daughters.

There are many difficulties in the way of inducing the great mass of women workers in our industrial cities to organise their forces. Some of these difficulties arise from mere ignorance, and can only be overcome by improved education. In most factory districts the girls are now expected to enter the mills as early in life as the boys, and the education of the two sexes should therefore be further assimilated, and the girls taught to prepare themselves for a working life, and to understand the necessity of protecting their trade interests. Other difficulties are the results of their economic position, and for these other remedies must be sought. Undoubtedly, one of the chief obstacles to the more complete combination among women workers is to be found in their general expectation of marriage, and the hope that they may be thus released from the necessity of competing in the labour market for their living. Unfortunately, however, a very large proportion of them have to continue at work after marriage, and experience should, therefore, teach them the necessity of clinging to the support of their trade society. Women, too, must learn to recognise that they cannot stand apart in the world, but that they must, indirectly at any rate, share the fortunes of men. When the men have their great struggles for a living wage, such as that of the great coal lock-out of 1893, the women have a part also to play, and a very sad and weary part it often proves. At the women's great meeting in St. James' Hall in aid of the locked-out miners, it was urged that, even if the men were not to be helped, at any rate their wives and children should be provided for. It is, however, quite as hard to starve quietly as to starve fighting, and this many of the women had to do.

Women are placed at a great disadvantage in regard to the wages they receive, by their disorganised condition, which accounts, to some extent at any rate, for the miserably low standard which is generally considered sufficient for them. We have Mr. Giffen's authority for the statement that wages in any trade are influenced in a downward direction by the number of

women engaged in it. No doubt this may be partly accounted for by long custom, and the ingrained habit of regarding women's requirements as being smaller than men's; and also partly by the facts that great numbers of women work at unskilled labour only, which is always poorly paid, and that many of them are not entirely dependent upon their own earnings for their livelihood. But, in addition to all these minor causes, there can be little doubt that the absence of organisation among them is the chief cause of the low pay which women receive. We know, for instance, that in Lancashire the women weavers are paid exactly the same piecework prices for the same work as are the men weavers, and that their earnings are almost identical. The same is true of the women workers in a few other industries where they are equally well organised with the men, and it is a matter of regret that such instances should be exceptional. It is strange, too, that so few employers should regard it as a good investment to pay wages that will keep their workers in a healthy condition. One would have thought that the truth of the "dearness of cheap labour" would have impressed more of them than is so far the case. They do not work half-fed horses, nor do they begrudge the necessary expenditure and labour required to keep their machinery in thorough order, but the most important of all, the easily damaged human machines, are expected to work as well, both in regard to quantity and quality, whether they are well or ill fed, whether in good or bad health. From a social point of view, too, the existence of a large number of persons able to demand no more than the barest necessities is a source of grave evil. It tends to keep back the progress of the whole of the working-class, and to retard the growth of Trade Unions and other associations for their improvement. Everything which tends to educate women, and to raise their hopes of the possibility of a more comfortable existence, draws them towards the path of progress. When they fully realise that more wages and more leisure mean better health and more happiness, they may be trusted to discover the best means of securing those advantages.

Although much has been done for working women in the way

of factory legislation, they do not reap the full benefits of those enactments. The provisions of the Factory Acts are unknown to the great majority of women, and although the law provides that an abstract of the Act shall be placed in a conspicuous place in every workshop, it is sometimes found to be kept in a cupboard, or hung upside down in a dark corner. Again the law relating to dismissal from work, fines, and payment of wages in cash, is by no means so well known to the workers as it should be. One of the most useful functions of a Trade Union, and one which ought to recommend such an organisation, especially to all women workers, is, that it gives its members an opportunity of readily ascertaining the law upon such points as these, and also assists them in their efforts to secure its enforcement.

In my capacity as secretary of the Women's Trades Union League, many applications have been made to me as to the legality of charging girls for the thread used in tailoring work, as is done in workshops in Oxford. In some cases the girls are actually sent out to buy thread for their employers at 1s. per dozen skeins, which is afterwards sold to them for their work at just double that price. It was thought that this system could be stopped by means of the Truck Act, as the deduction of these amounts appeared to involve payment in kind, but, unfortunately, the first prosecutions brought by one of the newly appointed women factory inspectors were not successful. Another such deduction, which even long custom fails to justify, is that frequently made for gas, an absolute necessity to enable the work to be done and for which the employees ought not to be taxed. It becomes even more preposterous when the charge is continued throughout the year as is the case in some factories, when it amounts practically to a charge for daylight. Indeed, there seems to be no limit to the charges and fines imposed on women in factories and workshops, involving often the loss of as much as a third of the total weekly wage to the sufferers. Many complaints have been made to me of fines imposed for laughing, speaking to a neighbour, looking out of a window, and a host of other similarly trivial offences. Such numerous

fines substantially reduce the small wages paid to the women, and they betoken a state of tyranny which men would not tolerate for a moment, and can successfully resist by the aid of their organisations.

But until women have had a certain amount of education in these matters they do not even appear to realise the gross injustices they suffer. I have heard intelligent working women protest against the Eight Hours movement on the ground that they "did not want shorter hours, or overtime abolished, they were quite content." That they *should* be content is the sad part of it, for to be so shorn of hope and imagination as to be unable to picture what increased leisure would mean to them, is a deplorable state of things. The root of the matter is that they fear shorter hours would mean less money. They do not dream that their small wage would not be diminished, and when they find that Trade Unionists, while seeking to diminish the number of hours worked, at the same time depend on the better work done in the shorter time to allow of equal wages being paid, a different tale is heard. Shorter hours are most essential to women, as without them there is no comfort in their homes, and little health in their families. They have no time to prepare proper food, without which health cannot be maintained.

Some optimists try to persuade us that there is no need for so much agitation. They content themselves with the idea that public opinion has grown so strong in favour of fair conditions for all classes of workers, that no employer at the present time would dare to take advantage of his employees, or to evade the Factory Acts. This, unfortunately, is not the case, or there would not be the long record of prosecutions brought by the women factory inspectors on behalf of women, which was recently published in the *Women's Trade Union Review.*[1] In December, 1893, for instance, a working tailor of Spitalfields had to answer to eight summonses for employing four women from 8 a.m. to 10 p.m. without allowing them a total period of two hours for meals. Many other similar cases might be cited to prove that there are

[1] See the *Women's Trade Union Review*, vol. .

employers who are all the better for having no option as to the length of time they work their employees. Public opinion being so important a factor in these cases, and largely influencing the judgments of the courts, as well as the judgments of the newspapers, it is necessary to be unwearying in efforts to make known the necessity of improved conditions for women's work. Another grievance is to be found in a new custom which is springing up among tailoresses, and which will have a very bad effect if continued. In a short spell of work they are only paid for the actual amount of time worked, although they may have been kept waiting in the shop half the morning. Formerly, never less than half a day was paid for, and it is quite a new departure to pay only for a few hours. The necessity of waiting in the shop, and not being allowed to call at a later hour on the chance of work, is a great imposition. The employer refuses to give the women the work if they are not on the spot the moment the work comes in.

The Women's Trades Union League exists for the purpose of helping women to make such grievances known. Its influence is used to increase the number of women in the Trade Union ranks, to form new societies, to strengthen those that exist, and especially to guard the interests of women in any fresh legislation proposed. Trade Unions of which women are members are affiliated to the League, and by this means a knowledge of the progress of the women's movement as a whole is spread all over the United Kingdom. As a proof that there are some large and successful unions in existence which include a large proportion of women workers, I may mention the Northern Counties Amalgamated Association of Weavers, which has a total membership of 72,000, of whom 43,000 are women and 29,000 men; the Amalgamated Association of Card and Blowing-Room Operatives (of Lancashire), which has 35,000 members, of whom 21,000 are women and 14,000 are men; and the West Riding of Yorkshire Power Loom Weavers' Association with 5,000 members, of whom 2,000 are women and 3,000 are men. In two of these instances it will be seen that the women greatly outnumber the men members. There can be no real reason, therefore, as some people would have us believe, why

women cannot be as effectively organised as men are. What has been done in the north of England can be done elsewhere, although, perhaps, with more difficulty, as factory life cultivates that *esprit de corps* which exists to a greater extent among workingmen, and is so essential to the existence of a strong Trade Union. The women engaged in cigar-making in Nottingham and Leicester have a very strong and successful union of their own. The hosiery workers of Nottingham and Leicester are making great efforts to organise the workwomen in the trade, and have succeeded in enrolling over 2,000 of them, and in almost every other industry where women are largely employed the work of organisation is making steady progress.

In January, 1893, when the appointment of women factory inspectors was under the consideration of the Government, the Women's Trades Union League sent up a deputation to Mr. Asquith, the Home Secretary, consisting of delegates from its affiliated societies. The deputation was entirely composed of representatives of women working in factories, who would be directly affected and benefited by the appointment of women inspectors. It seemed time that the claims of this large body of women should be recognised, and they were recognised by Mr. Asquith. Some of the information as to the condition of the factories had to be given in writing, as it was considered too unpleasant to be mentioned publicly. It struck many with surprise, that respectable women should be compelled to earn their living under conditions that were too unpleasant to be spoken of openly. Many of these facts had not been previously made known, owing to the circumstance that women will not complain to men, even if they are factory inspectors. The deputation from the Women's Trades Union League represented 65,000 working women, and, with the other deputations received at the same time, more than half a million of working women were declaring themselves in favour of the new departure. It was a question on which the women employed in factories had felt very strongly for many years, and one on which several ineffectual attempts to gain reform had been made at intervals. Mr. Asquith declared him-

self as being entirely in sympathy with the demand, and at once appointed two ladies as inspectors of factories, promising, when circumstances permitted, to increase the number. If a Government is to be moved, only large bodies of the people can do it. The grievance of an individual may be as serious as that of many, but unless there is unanimity in the plea for change it will be unavailing. Nearly twenty years' steady, unobtrusive work had been done before this innovation was gained. Emma Paterson, in 1874, first started the agitation in favour of women factory inspectors, and the Women's Trades Union League, which she founded, has carried on the work ever since until this successful issue has been attained. This was the first women's society, and for many years the only one, which took the question up, and it is the time to relate the fact when some measure of success has been achieved.

There have been many instances of women combining in order to get rid of some special injustice, but many of these successful organisations have been lost sight of, owing to the societies having been dissolved when their objects were realised. When Mr. Matthews' Factory Bill was before the House of Commons some time ago, the laundresses of London combined and formed many branches of a union, with the avowed object of demonstrating to Mr. Matthews that they had a real desire to be included under that Act, in order that they might secure the same protection as was afforded to workers in other factories and workshops. Mr. Matthews, however, refused to receive a deputation from the laundresses. A canvass of the workers was made, and 65,000 laundresses were found to be favourable to the proposed inclusion of their trade under the Factory Act. The workers who had organised themselves with a view to bringing the disabilities of laundresses before the public, were greatly disappointed by the want of success in even gaining a hearing, and it caused the women to abandon their Trade Union. Women have hitherto suffered a great deal from their inability to get their claims attended to. For this reason working women would specially welcome the vote, as legislation touching their trade interests vitally affects their power

of earning a livelihood. In the case of the laundresses the shocking conditions under which they work make it very desirable that some pressure should be brought to bear on the employers. Women who work fourteen, and in some cases sixteen hours a day, in a hot and moist atmosphere, sometimes standing in water an inch in depth, must be morally and physically degraded. Their health soon fails them, and their work becomes inferior. Such conditions lead directly to intemperance and other evils. Laundry work is an employment in which the bogey of "foreign competition" need not deter the workers from forming a union, as our washing must be done at home, but there are great difficulties in the way of getting women with so little chance of leisure for improvement to realise the necessity of combination. However, the laundresses took up the cause and worked with great spirit at the time I allude to, and we have hopes that in the near future they will secure that protection of the law which they so sorely require.

It is generally admitted, I think, by all parties, that improved sanitary arrangements in factories and workshops, shorter hours, and larger wages are the chief requirements of women workers. The question is the best policy to pursue to gain these ends. It seems certain, however, that very little can be done unless the workers are organised in some way. We cannot get at the facts of the case from isolated workers, and they are unable to give the information required before steps towards improvement can be made. Their horizon is too near. True and lasting reform must come from below and not above, and, therefore, instead of spending our lives pointing out the deficiencies of employers, and regretting that they as a body do not do more to lessen the toil of their workwomen and thereby brighten their lives, let us endeavour so to assist the workers as to make it easier for them to help themselves. At the present time great interest is being shown in the subject, and we must await the practical results of this new enthusiasm for the working-classes, meanwhile doing everything in our power to educate those most nearly concerned. However much we are in the right, it is difficult to make others recognise it, and impossible to enforce our opinions unless we can prove a

certain unanimity among the class for whom the reforms are advocated. Indeed it is only when we can prove that we have their support that we have any right to enforce our opinions. To first organise the workers is therefore a necessity, and must be the first step towards educating them and inspiring them with higher ambition, and a desire to enjoy healthier and happier lives.

THE NEED OF LABOUR REPRESENTATION.

By Alderman Ben Tillett, L.C.C., General Secretary of the Dockers' Union.

THE necessity of direct labour representation on all governing bodies, is one which is becoming daily more apparent to the workers of this country. On all sides we find that the organisations which are specially representative of the working classes are beginning to recognise this necessity, and to take such steps as they think best fitted to meet it. The annual Trades Union Congress, held at Belfast in September, 1893, passed the now well-known resolution in favour of the establishment of a proper fund and organisation for the purpose of assisting independent labour candidates in all local and Parliamentary elections.[1] The London Trades Council has taken up the same cry, and is now engaged in formulating a scheme whereby the same need may be met. Many of the most important of the Trade Unions have taken steps in the same direction. The Miners' Unions, which have long been more forward in politics than those of other classes of workers, have, for many years, maintained direct representatives in the House of Commons. Their example has been more recently followed by the National Amalgamated Sailors' and Firemen's Union, while the Amalgamated Society of Engineers

[1] Resolution moved by the writer of this paper, at Belfast Congress, 1893. See "Report of the Twenty-Sixth Annual Trades Congress, 1893, Published by the Authority of the Congress and the Parliamentary Committee," pp. 44-46 (Manchester: 1s.). The Congress of 1894 has carried the matter a step further by appointing a special committee charged to carry out the proposed plan of raising funds, etc., for this purpose.

has, by a vote of its 75,000 members, declared itself ready to pay a levy of 3d. per member, which will realise over £800, for the expenses of Parliamentary candidates. The National Union of Boot and Shoe Operatives, the Amalgamated Society of Railway Servants, and the Amalgamated Society of Tailors, have each voted to maintain a member of Parliament, while the National Union of Teachers has two candidates already in the field.[1] Many other Trade Societies have endorsed the candidature of their officials for parliamentary and municipal offices, and the number of these is being increased almost every day. Under such circumstances as these then, when it can no longer be doubted that the workers are awakening to a sense of their great need in this respect, it may be well worth our while to devote a little time to the consideration of the history of the question, and to the causes which have tended to produce this growing feeling in favour of the direct representation of their interests, which is so rapidly spreading among the artisan and labouring classes of this country.

If we may place any reliance whatever upon the lessons of history as taught us by our professors and economists, it is reasonable to believe that in remote centuries the civic spirit, the sense of common rights and duties in the state, was not only absent from the breasts of the bulk of the inhabitants of these islands, but was, indeed, necessarily so absent. In the days before the growth of the large towns, the population of this country consisted chiefly of the lords of the manors and their retainers, the High Church dignitaries and their subordinates, and the serfs and vassals upon their estates. The workers, secure as they may have been in the tenure of their small plots, or portions of plots of land, were nevertheless dependent upon the lord of their manor for practically all the means of life, and

[1] There are at present six members of Parliament maintained directly from the funds of their respective Trade Unions. The Northumberland and Durham Miners' Associations send three; the Miners' Federation sends two; and the National Union of Sailors sends one. The number of Labour members upon local bodies is not known, but must be considerable.

almost for the very right to live itself. They were far too occupied with their work upon the land, of which they were practically the peasant proprietors under certain conditions, to feel any interest in civic affairs, or to take any part in the work of government. Their system of farming was perhaps as wasteful and extravagant as any that could well be conceived. They had to render service upon the lord's demesne just at the time when their own crops most needed attention; they were without the use of any but the rudest kinds of mechanical appliances; and they had no scientific system of drainage or of manuring the land. Under such circumstances the mere getting of a living from the soil must have entailed such hard and engrossing toil, as to have left the serf neither the energy nor the time, even if he had had the opportunity, to take any part in the affairs of the government of his country.

I do not suggest that they felt the need of any such action. It is indeed probable, that in spite of the untoward circumstances of their lot in many ways, they were far happier and more contented, and secured a larger share of the wealth they produced, than is the case with many thousands of the highly civilised and highly Christianised people who now occupy their places. But this absence of desire and of opportunity on the people's part to interest themselves in these questions ultimately cost them dearly. The lords of the manors were not so fully occupied that they could not find time to study their own interests in the State. After many struggles they succeeded, as we know, in wresting from the monarch the charter of their own rights and liberties. In this work they were by no means slow to avail themselves of the assistance of their serfs. But having gained the powers and privileges they claimed, they did not scruple to quickly use them against the simple and unsuspecting class by whose efforts they had been so largely attained.

It was under such circumstances as these that the groundwork of our present system of land tenure was first laid. The rich and powerful lords exerted all their powers to increase and render more secure their own possessions. No doubt some of the

changes they effected on their own behalf, were subsequently advantageous to the nation as a whole, but they were carried out with a savagery, and a disregard of the rights of the people and of all civic responsibility, which must have resulted in enormous and overwhelming misery to whole classes of the population. The transformation of the security of Tenure, formerly enjoyed by the serfs and tenants in return for the fixed services rendered to the lord, into a money payment of Rent, simple as that act may have appeared, enabled the lords to eventually dispossess their tenants without compensation of any kind for disturbance or improvements. The enclosures of the Commons which went steadily on from the end of the fifteenth century, were carried out with total disregard to the welfare, or even the rights of the poor, and led to much suffering among them.[1] In every direction the landowning and governing class spared no pains to secure their own interests, and if those interests happened to clash with the previously accepted conceptions of right and duty, it was simply so much the worse for those conceptions."[2]

Against this spoliation the mass of the people, simple and ignorant as they were, had absolutely no remedy. They did indeed rise in spasmodic rebellions under the leadership of a few more sagacious men such as Wat Tyler, or Ket the Tanner of

[1] The earliest known enclosure took place in 1488-9, and they continued, with brief interruptions, until the middle of this century. (See Professor W. J. Ashley's "Economic History and Theory," vol. i., p. 289.) According to the figures given in Porter's "Progress of the Nation" (1847 edition, p. 146) there were 3867 Enclosure Acts passed between 1760 and 1844 only. Of the savagery with which the earlier enclosures were carried out, Ashley says that "the language of the Statutes concerning the pulling down and destruction of towns, so that where once 200 persons had been employed there were now but two or three herdsmen, is no exaggeration, but a sober description of what had really taken place." ("Economic History and Theory," vol. i., p. 280.)

[2] See, for instance, the circumstances under which the evictions of the "tenants by custom" were carried out by the lords of the manors in order to turn their land into sheep walks, in defiance of all custom and precedent and of the express dicta of the judges and the law books. (Ashley, "Economic History and Theory," vol. i., p. 278.)

Norwich. But all such movements were rapidly and ruthlessly suppressed by the authorities acting under the orders of the dominant class. The "dim inarticulate multitude" of those days had very few means of even making their grievances known, and the full extent of their sufferings at this time have probably never been revealed. But the extreme miseries caused by the dispossession of the serfs, and by the transition from a state of feudalism involving a fixed occupation and a certain living, to that of a workless and homeless freedom; the intensification of those miseries by the enclosure of the commons in order to make sheep farms, combined with other causes such as the depreciation of the currency, have left their mark upon the Statute-book. Laws containing the harshest and most stringent provisions for harrying and repressing beggars, tramps, and out-of-works, formed practically the entire industrial legislation from 1350 to 1550. Whipping, branding on the forehead, the loss of one or both ears, slavery, and in the last resort death, were the punishments awarded by these statutes in graduated stages of refined cruelty, to those who should be unfortunate enough to wander about workless. Even these terrors, however, were not found to be sufficiently effective as deterrents. For while the main part of each new statute was devoted to increasing with the utmost severity the cruelties of its predecessors, the preambles to these same acts are full of plaintive confessions of the impotence and uselessness of the preceding provisions, and of complaints of the great increase in the numbers of "valiant beggars" and of "sturdy rogues and vagabonds."[1] During the reign of King Henry VIII. alone, enormous numbers of such persons were executed as tramps and vagabonds. Thus the old, old game was played. First make your criminals by depriving the poor of every chance of obtaining an honest living—then punish them severely for the offence. But it is needless to dwell longer on the misrule under which the people at that time suffered, and against which they remained for centuries without

[1] See Sir George Nicholl's "History of the English Poor Law," *passim*, and the Statutes of the Realm of these years,

any means of redress. They were deprived of any voice in the conduct of government, and compelled to accept whatever their lords and masters chose to give them. Mr. Gladstone has summarised the position exactly when he says that up to the time of the great Reform Act of 1832 "the determining influence of our government lay with the peerage and the possessors of the land. They formed a partnership harmonious enough, and strong enough to hold the citadel of the constitution against the people. And the people were governed this way or that way with their will or without it."[1]

It was under such conditions as these that the growth of industry and commerce led to the rise of the great towns. For a time it looked as if the inequalities in wealth and power created by the land monopoly were to be to some extent remedied by a more equal distribution of property and influence in the towns. Industries grew up largely as small crafts, carried on by the master craftsman himself, and strictly controlled by the gild or company of the trade and the corporation of the town. In both of these communal organisations the master craftsman, even if not also his assistants, took a share in the work of government, and it is probable that it is from this period that the growth of the civic spirit largely springs. How far the gilds embraced the whole working population is a matter of considerable doubt. There was probably always a large class of unskilled labourers, belonging to no handicraft, who were debarred from the exercise of any municipal rights. But at anyrate the bulk of the skilled artisan class must have exercised during mediæval times, either as members of their gild or as freemen of their city, considerable influence in the corporate life and government of the towns.

But whatever may have been the part played in municipal government by the ordinary town artisan or master craftsman of

[1] "The Rights and Responsibilities of Labour," by the Right Hon. W. E. Gladstone, p. 4. London: reprinted from *Lloyd's Weekly News*, 1870. It is as well to remember that as lately as 1831, 150 persons returned a majority of the House of Commons. (Molesworth's "History of the Reform Bill," p. 347.)

the Middle Ages, he was not destined to survive. With the rapid growth of commerce and the discoveries and inventions of science, a new order was ushered in. The vast improvements in mechanical processes, combined with the growth of great organising capacity, led to the supersession of the old handicraft system by the modern "grand" industry or factory system. The new capitalist class which now arose, consisting largely of offshoots from the landowning class, began promptly to study how to secure to itself the rapidly increasing wealth produced by the nation. In their turn they strove to wrest from the dominant landowning class the powers of government, and to use these powers for their own interests. But to do this they found it necessary to secure the assistance of the mass of the population. With this help they succeeded, after long struggles, in gradually securing their own predominance in the state, and in their turn they have not scrupled to use their power to the detriment of the class which had helped them to gain it.

The period which followed the industrial revolution was without doubt that in which the working classes of this country reached the very lowest level they have ever touched. Economically, socially, and industrially, their position was hopelessly bad. Every increase in the productivity of their labour, whether it was brought about by increased severity of their toil, or by longer hours of work, or by the introduction of new processes, served only to enrich the already wealthy. The workers were not only not allowed to take any part or share in the rapidly increasing work of Imperial government, but were even deprived partly by economic causes and partly by statutes, of that share in the government of their own towns which they had previously enjoyed. The privileges which the freedom of their city—obtained by seven years indentured apprenticeship within its walls, or by patrimony—had conferred upon the skilled handicraftsmen were abrogated, partly by the almost general abandonment of the apprenticeship system, and partly by changes in the law, which imposed a property qualification upon citizenship. By 1830, in short, the whole artisan and labouring class in this

country were practically left without a single means whereby they could secure direct expression of their opinions or representation of their grievances upon any public body in the kingdom, whether local or national. The results of this absence of any particle of political power soon became obvious in the rapid degradation, both morally and physically, of the working class and the conditions under which they lived. The workers, finding that their standard of living was being steadily yet surely depressed, endeavoured to find a means of redress. But every attempt on their part was futile, and they found themselves bound down by laws, in the making of which they had no voice, but which forbade them to take any step whatever for their own protection. The dominant class, whether landlord or capitalist, rigidly refused to administer such laws as were yet upon the Statute Book that might have ameliorated the condition of the workers. Their attempts to put in force the statute of apprentices, or the Acts authorising the justices to fix the rates of their wages, were all failures from this cause. On the other hand the laws which prohibited combinations of workmen were strengthened, and administered with a harshness which exceeds belief.[1]

There can be little wonder that under such circumstances as these the working classes were turbulent and riotous, and easily led into sedition and incipient revolt. Gradually, however, they began to find other and surer methods of defence. In spite of all anti-combination laws, Trade Unions grew up and flourished in almost every industry. Side by side with this movement commenced also a steady agitation for political reform. The early years of this century saw the skilled workmen everywhere well organised for trade purposes, and beginning to take part in most of the forward political movements of the time.[2] From then

[1] For a full history of these events see "The History of Trade Unionism," by Sidney and Beatrice Webb, chap. ii. *passim*. During the whole of the years 1799-1824, while the anti-combination laws were being rigorously enforced against workmen, no single instance of its application to a combination of employers can be discovered, although such combinations were both frequent and open.

[2] The great part played in the early Reform movements by the mass of

till now the workers have steadily pursued their progress on these lines. They have been, it is true, temporarily led away by other and chimerical movements, but the sturdy common sense of their leaders, and the law-abiding instincts of the masses, have always brought them back to the true and constitutional line of progress. Gradually and slowly their strenuous agitation for political reform has affected its objects. Little by little the property qualification of citizenship has been reduced, until now, although the qualification remains essentially that of property and not of manhood, it is so far minimised as to be no longer a restriction upon the great mass of the workers.

But although the workers have thus been steadily gaining influence in the State since the passage of the Reform Act of 1832, they have not yet managed to take anything like full advantage of their position. Since 1884 there has been a total of about 6,000,000 voters annually placed upon the lists, out of a population of about 40,000,000, or roughly, two out of every three adult men.[1] Thus for ten years, at any rate, the workers have held in their hands the enormous power to make or unmake governments. But they have not yet fully realised their power or their opportunities. A competent observer has said that although the ultimate power of political action in this country is in the hands of the masses constituting the democracy, yet our institutions have not been democratised.[2] This is the task which lies before the labour movement to-day. It is in order to secure the democratisation of our institutions that the workers are beginning to realise the necessity for direct labour representation.

For what are the facts of the situation? In spite of the democratic machinery of our government, and the wide extension

the working classes, who themselves gained nothing by the extensions of the Franchise at the time, are sometimes overlooked. The Act of 1832 was obtained very largely through the strenuous agitation of the workers and their trade clubs.

[1] A proper system of registration would add at least another million and a half to the total of voters.

[2] Mr. Gladstone in the pamphlet already quoted.

of political power and responsibility, the whole of the work of governing the empire is still practically in the hands of a small minority of wealthy people. They, by virtue largely of their greater leisure and superior educational opportunities, monopolise all our public offices and fill our elective councils. Lawmaking, the executive, administrative and judicial functions are all centred in their hands. Even in local matters every class but the workers has been fully represented, and in short every conceivable office has been manipulated by, and run in the interests of the wealthy and not of the poor. An analysis of the membership of the present House of Commons reveals the fact that of its 670 members no less than 656 belong to the monied class, or one or other of the well-paid professions, leaving only 14 to represent the working classes. Of the House of Lords there is no need to speak. Everyone is well aware of the number of working men it contains. Yet no one, least of all the workers, can doubt that the legislation turned out would be vastly different from what it actually is, if a majority of the House of Commons were working men, as of course a very large majority of the voters are. There would be first of all less insistence on the mere shibboleths of party. The war of words over party trifles would give way to a stern fight for social progress, and the annihilation of poverty and its attendant ills. In this stern fight the workers are beginning to realise that men who have "Lived the life" are above all things necessary if their claims and difficulties of their class are to be understood properly, much more so if they are to be dealt with successfully.

But when the workers, recognising for the first time this fact, seek to secure the adequate representation of their class in the councils of the nation by means of the ordinary constitutional methods which other classes have previously adopted for the same end, they are adjured by their "superiors" to be careful that they do not make bad worse and ruin our country. We are told that it is right that the powers of government should be exclusively in the hands of the wealthy and "cultured" classes, who alone can be expected to understand the gravity and importance

of the issues with which they deal. But let us examine what have been some of the social results of this abnegation of its power by the working classes, and of the last 100 years of government of the "superior" and "cultured" ones whose homilies we have been describing. It will not, I think, be generally disputed that a comparison of the condition of the working classes now with that in which they were 100 or even 50 years ago, would show a very considerable advance.[1] In spite of this advance, however, the position of the workers to-day is far from enviable. Notwithstanding the great increase in wealth and productivity, whole sections of the people, comprising at least 5 millions, are unable to obtain a subsistence sufficient for health or efficiency.[2] Nor can this be a matter for surprise. The total annual income of the United Kingdom is estimated to be about £1,350,000,000, of which sum the 26,000,000 workers receive as wages only £500,000,000, or about one-third of the total, while the remaining £850,000,000 or nearly two-thirds, goes to the remaining 11,000,000 persons who are the recipients of rent and interest, and of the salaries of professional occupations. And while a small body of some 222,000 families enjoy incomes of about £1,200 per annum, the average earning of the adult male workman does not exceed £77 per year.[3]

Each year, one in every twelve of the manual working classes is compelled to seek poor law relief in some form or other.[4] Mr.

[1] See, for instance, "The Condition of the Working Classes in Great Britain in 1842-92," by Sidney Webb, in the "Co-operative Wholesale Societies' Annual, 1893," and Engel's "Condition of the Working Classes in 1844" (Swan Sonnenschein [Social Science Series], 1892. 3s. 6d.) Also R. Porter's "Progress of the Nation, 1842," o.p.

[2] See Mr. Giffen's evidence before the Royal Commission on Labour, that 25 per cent. of the whole adult male workers in the kingdom fall below the line of 20s. a week, and that this might be taken as a low subsistence level. (Ques. 6992, 8125, 8134, Commission sitting as a whole).

[3] See the figures by Mr. Giffen, Professor L. Levi, and Mr. Mulhall, summarised in "Fabian" Tract No. 5, "Facts for Socialists," Fabian Society, 276 Strand, 1893. 1d.

[4] See Mr. Charles Booth's paper before the Statistical Society, Dec., 1891. Also his "Pauperism: a Picture;" price 6d.

Chamberlain has expressed his belief that of those of the working classes who attain the age of 65 years, nearly one-half receive relief before they die. The maintenance of our paupers costs us over 10½ millions of pounds yearly, and Mr. Giffen has spoken of this class of 5,000,000 persons, "whose existence is a stain upon our civilisation."[1] In London alone, one in every five of the inhabitants will die in the workhouse, hospital, or lunatic asylum. Over 30,000 persons live permanently in common lodging-houses in the same city, while 1,100 are nightly compelled to seek shelter in its casual wards. While in addition to all this, Mr. Charles Booth has calculated that of the 4,000,000 persons in the metropolis, no less than 938,293, or 22·3 per cent. of the total, are so poor as to be compelled to live in a state "of chronic want"; and 1,292,737 or 30·7 per cent. are to be classed as below the poverty line, their earnings not exceeding one guinea per family per week.[2] And if we turn from the people themselves to their surroundings, and inquire what sort of a dwelling our civilisation gives the workman, we shall find that it is equally bad. Mr. Booth has shown that in London alone, 300,000 persons, or one in every twelve, must be dwelling in tenements of no more than one room to the family. The census returns show that nearly two and a half millions of persons in England and Wales alone, live in tenements which the Registrar-General declares to be overcrowded.[3] In Scotland 22 per cent of all the families still dwell in a single room each, while in Glasgow 33 per cent. of the total population are huddled into single room tenements.[4]

Nor is even this the whole tale. While a large section of the working population is worked over-long hours at dangerous and unhealthy occupations, another section, yet unhappier, is unable to find any work at all to do. The evidence given before the Royal Commission on Labour proved that many of the chemical workers, the railway and tramway servants, the iron and steel

[1] "Essays in Finance," vol. ii., p. 350.
[2] See "Labour and Life of the People," by C. Booth, vol. ii., pp. 40.
[3] Census Report, 1894, C. 7, 222.
[4] Census Report, 1894, C. 6,755.

workers, the shop assistants and many grades of women workers, habitually labour for at least 12 hours a day, whilst many exceed 15 hours.[1] At the same time there are in London alone, according to the Mansion-House Relief Committee, an average daily number of 20,000 unemployed men,[2] while the total number of unemployed throughout the whole kingdom at any one time cannot be far short of 500,000 men. The existence of these with their dependent families, numbering in all some 2,000,000 persons, forms at once the most vital and the most pressing of all the problems of government. Yet no attempt of any kind has yet been made towards dealing with it.

But it is unnecessary to dwell further upon the painful details of the present social condition of the working classes. While the "superior" persons are quarreling among themselves over the merest trifles, and assuring the working men of their incompetence to govern a kingdom, they have by their own mismanagement and selfish and brutal policy permitted the social condition of a great mass of the people of the country to remain a stain and disgrace to our civilisation. All who know anything of these questions are well aware that the facts as to the condition of this large class of people could not be drawn too black. Mr. Huxley has said that he would rather be born a Fiji islander than a slum child in England; and speaking of the same evils, a competent and by no means alarmist observer has said, "To me, at least, it would be enough to condemn modern society as hardly an advance on slavery or serfdom, if the permanent condition of industry were to be that which we behold, that 90 per cent. of the actual producers of wealth have no home that they can call their own beyond the end of the week; have no bit of soil, or so much as a room that belongs to them; have nothing of value of any kind except as much old furniture as will go in a cart; have the precarious chance of weekly wages which barely suffice to keep them in health; are housed for the most part in places that

[1] See the answers to Groups A, B and C, and the evidence in the trades mentioned.

[2] See their Report, 1888.

no man thinks fit for his horse; are separated by so narrow a margin from destitution, that a month of bad trade, sickness, or unexpected loss, brings them face to face with hunger and pauperism. . . . This is the normal state of the average workman in town or country."[1]

Nor can it be necessary to spend much time in pointing out the real cause of these evils under which the working classes suffer. When we remember the fact that of the total annual income of the country two-thirds is absorbed by a small class numbering about one-fourth of the population, the reason for the poverty of the remaining three-fourths cannot be far to seek. Happily, on this point, too, the workers are beginning to value the truth. The four working men commissioners who signed the Minority Report of the Royal Commission on Labour, after reciting a long series of detailed grievances of the working classes, say :—

"It is impossible to refrain from connecting this deplorable condition of the working class with the fact that two-thirds of the annual product of the community is absorbed by one-fourth of its members, and that the annual tribute of rents, royalties, and dividends levied upon the industry of the nation amounts to nearly £500,000,000 sterling.[2]

In other words, the rich have secured to themselves by legal monopoly the bulk of the wealth produced by the community. They have manipulated the whole force of government to this object, and will continue to do so as long as the rest of the population are content to allow it.

The remedy for this state of things, however, lies now in the hands of the working classes themselves. They possess the power to insist on the full and proper representation of their interests. Hitherto they have scarcely recognised the vast uses that can be made of the franchise, and the governmental machinery it commands, to ameliorate the evil social conditions under which they

[1] Mr. Frederic Harrison in "Report of Industrial Remuneration Conference," 1886, p. 429.

[2] "Minority Report of the Royal Commission on Labour," p. 7 ("Manchester Labour Press," 1894; price 2d.)

live. Thus, the labour movement has so far never developed a really powerful and practical organisation for legislative purposes. The Trades Councils, and the Trades Congress with its Parliamentary Committee, form an excellent nucleus for such an organisation, but they have never been properly developed or supported by the workers. Happily, however, they are beginning to see more clearly the miseries they endure, and to recognise that there is only one path out of their present state. That path is clear. The whole force of the democracy must be thrown into the political arena with the object of securing the direct control of the machinery of government for the workers. That once achieved, steps must be promptly taken to bring about a reorganisation of society on a more systematic and equal basis. "It is indeed certain," says Dr. Ingram, "that industrial society will not permanently remain without a systematic organisation. The mere conflict of private interests will never produce a well ordered commonwealth of labour."[1] To produce a well-ordered commonwealth of labour by means of the political power in its hands, is the work that lies before the Labour party and the Trade Unions. To achieve it will need that the workers throughout the whole country shall unite firmly in a bond of common brotherhood, and, sinking all petty jealousies and local discords, work heartily and harmoniously together. Their interests are identical and clearly defined, and the object of their endeavour perfectly definite and realisable if only unity prevails in their ranks. If the workers really desire to see the dawn of a better day for themselves and their children they must devote the whole of their strength to gaining the power of government and directing it to the substitution as rapidly as possible of public for private enterprise and control in industry. Thus, and thus only, can they hope to secure to every worker the conditions of a reasonable life and of efficient citizenship.

[1] "History of Political Economy," by J. K. Ingram, LL.D., Professor at Trinity College, Dublin.

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